

MAY 21 1959

BIG 3 ROAD TEST!

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MOTOR TREND

- ▶ ELECTRIC CARS ARE BACK
- ▶ CUSTOMIZING IN MINIATURE
- ▶ AVOID BATTERY FRAUDS

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JUL 29 1959

FEBRUARY 1959 35c



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MAY 21 1959

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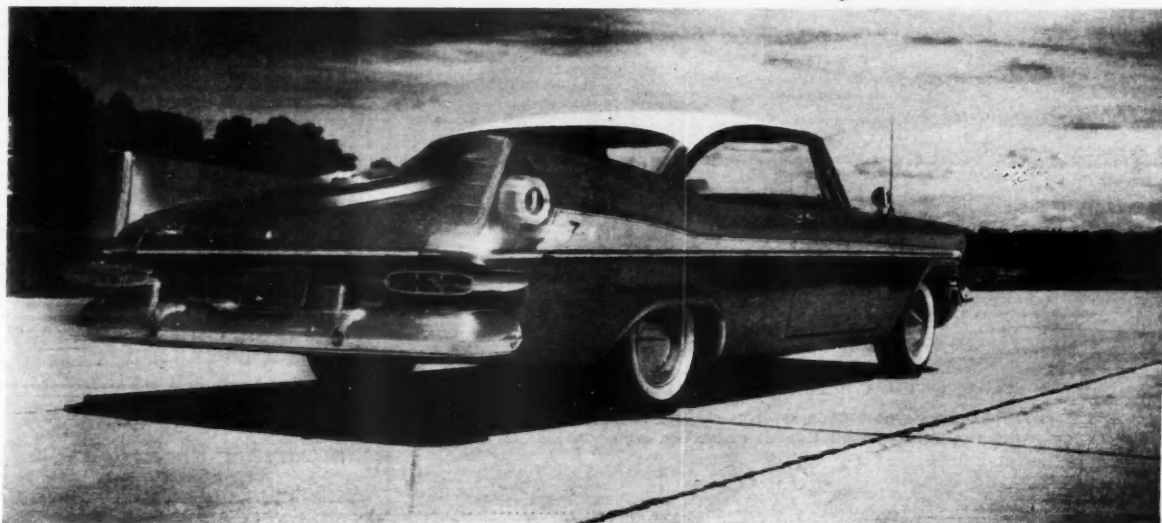


New Golden Commando 395 V-8 engine

* Optional, low extra cost.

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Plymouth



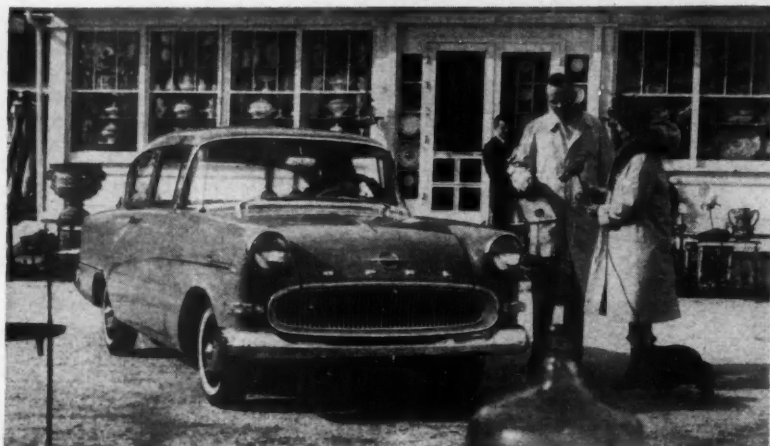
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FEBRUARY, 1959

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NEXT MONTH

Comparison Road Tests:

Dodge, Mercury, Pontiac

New Design Contest

MOTOR TREND

BIG 3 ROAD TEST!

MOTOR TREND



THE COVER:
MOTOR TREND'S first '59 multiple comparison road test features the Chevy, Ford and Plymouth. The testers are putting them thru their paces around a sweeping turn at Riverside International Raceway. Ektachrome by Bob D'Olivo.

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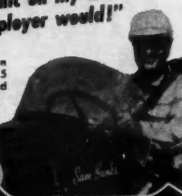
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SAM HANKS, 1957 Indianapolis Winner, says:

"I'd like a NATIONAL SCHOOLS trained mechanic on my crew... any employer would!"

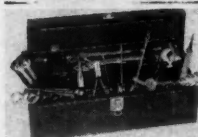
Sam Hanks holds American Closed Course record (182.5 M.P.H.); also many state and national racing titles.



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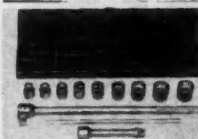
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MEMO FROM THE EDITOR



SINCE WE BEGAN PUBLISHING **MOTOR TREND** over nine years ago, we have looked forward to the day when we would have a program that would incorporate a "seal of approval" on products tested by us. With this issue, we take that giant step forward.

Over the past few months, you have probably noticed the increasing number of published product use tests—up to six per issue. If you are interested in these reports, you will also have observed that not all products tested were found to be satisfactory; some, in fact, were refused permission to advertise in our pages. This in itself was an important step forward, for the manufacturer of any product generally feels that regardless of the worth of his item, any and every magazine will accept his advertising.

For the present, this does not mean that *every* product advertised in **MOTOR TREND** has been approved by us. On the other hand, our "seal of approval" is not necessarily on the products that we approve in principle. Here, then, is the way our Product Use Test Approval Program works:

1) If a manufacturer wishes to obtain our "seal of approval," he submits (or we purchase) his product and perform the necessary test(s).
2) If a new product is being advertised for the first time and there is some doubt as to its merit or advertising claims, **MOTOR TREND** will perform a test on it—requested or not.

3) All products that are tested are publicized in our "Product Use Test" section (see page 54).

4) In the reports that accompany approved products, we will publish our "seal of approval" (seen at the top of this column).

5) The reports that accompany products that are not recommended, or are disapproved, by **MOTOR TREND**, will not display the seal.

6) The advertiser who has had his product approved can then use our seal of approval in his advertising—but of that product only (see page 13 for example). If he manufactures and/or advertises other products, he must use the seal only with the product approved by **MOTOR TREND**.

7) When changes in manufacturing processes are made, the seal can no longer be displayed by the advertiser—until the new product is re-submitted for further test.

Naturally, there will be some products that cannot be "product use tested." With these, consequently, the advertiser will not be able to display the MT seal. This will either be because a proper test cannot be conducted, or because the product does not require a test, or because a seal of approval would not apply.

An instance of the first variance would be many of the fuel and oil additives. Examples of products not requiring a test would be catalogs, books, and certain bolt-on accessories. Where our seal of approval would not apply would be on new cars. With these we can tell you how they perform, how they ride, how they are built—evaluating and criticizing them—but we cannot stamp them "approved." That's up to you.

There are many products that are now undergoing "use tests" by the MT staff. In future months, there will be many more. And we won't be waiting for advertisers to submit their products before we test them. If we see new products publicized or advertised elsewhere, we'll go out of our way to obtain them for test. Only in this way can we make our new "Product Use Test Seal of Approval" of the greatest importance to you—the eventual buyer.

Paul K...

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Bellflower Travel Service,
17036 S. Bellflower Blvd., Bellflower
Boulevard Trav. Serv., 6665 H'wood Blvd., H'wood.
Compton Trav. Serv., 428 E. Compton Blvd., Compton
Dempsey & Ford, 6707 Sunset Blvd., Hollywood
Fugazy Trav. Bur., 9493 Santa Monica Blvd., Bev. Hills
National Travel Service, 700 W. 6th, Los Angeles
Paul Duggan, 930-A N. LaCienega, Los Angeles
Rand-Field Travel Serv., 9406 Dayton Wy., Bev. Hills
Ray Cardillo, 1056 Broxton, Westwood
3452 1/2 Wilshire, Los Angeles
Sandberg Travel Bureau,
4285 Crenshaw Blvd., Los Angeles
World Travel Bureau, 274 S. Thomas, Pomona
106 S. Los Angeles, Anaheim
618 N. Main, Santa Ana
117 1/2 S. Commonwealth, Fullerton
301 E. Philadelphia, Whittier
620 N. Main, Santa Ana; 3638 Main, Riverside

Other Cities:

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Atlas Travel Service, 260 3rd Ave., Chula Vista
9 W. State, Redlands; 526 5th, San Bernardino

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133 Montgomery, San Francisco
Town & Country Village, Palo Alto
Fugazy Travel Bureau, 240 Powell St., San Francisco
Howard Travel Service, 578 Grand Ave., Oakland
San Leandro Travel Bureau,
1522 Washington Ave., Pelton Ctr., San Leandro

ILLINOIS

Chicago:
Sherman Travel, Hotel Sherman

FLORIDA

Miami Beach:
Allied Trav. Serv. & Tours, 224 Lincoln Road
Willy's Tours, Inc., 2921 Collins Avenue,
17250 Collins Avenue

LOUISIANA

New Orleans:
Travel Consultant, 124 Camp

MASSACHUSETTS

Boston:
Raymond & Whitcomb Co., 70 School Street
Fall River:
Fall River Travel Bureau, 29 N. Main Street
Wellesley:
Raymond & Whitcomb Co., 572 Washington St.

NEW JERSEY

Lodi:
Aabco Travel, Inc., Modell's Shoppers World,
Route 17 & Essex St.

NEW YORK STATE

Kingston:
Fugazy Travel Bureau, 2 Pearl St.
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Abbey Travel Service, 220 W. 42nd Street
Downtown Travel Center, Inc., 92 Liberty St.
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MODERN VERSION

Dear Sirs:

One of the most famous vertical grilles in the world was the Packard design in the '30s. I think Studebaker-Packard is missing a good thing by not using a modern version of this classic grille on their Hawk.



This cut shows how a Hawk would look with Packard grille, spear molding and hex-hubs.

Bud Overn

Santa Ana, Calif.

WHY NOT?

Dear Sirs:

I can appreciate the many innovations of the late-model cars, but why hasn't someone come up with a safer cigar lighter—one you could replace in the socket without taking your eyes off the road? Could one be located in the center of the steering wheel?

C. M. DeWitt

Maywood, Ill.

ACTUAL MILEAGE

Dear Sirs:

The used car business is the only business where the gullible, poor, and unsuspecting public is not protected from being deceived and cheated by new and used car dealers and persons selling used automobiles.

Our club has a suggestion which could be followed by every state in the U.S. It would not fully protect, but would protect within a few thousand miles of an automobile's actual mileage.

These suggestions are: (1) A space should be provided on all registration blanks for the speedometer mileage at the time an application is made for re-registration or used registration. (2) Anyone purchasing a used car must receive the transfer stub of the owner showing the mileage as of the last date when the car was licensed. (3) A penalty would be provided for falsely stating the mileage of a car.

These suggestions are only a start toward protecting the used car purchaser—but they are a very good start.

William Wingerath
Secretary

Gear Grinders

Hot Rod Club

Patchogue, L.I., N.Y.

ATTENTION: DETROIT

Gentlemen:

In reference to the auto gripes appearing in MOTOR TREND, I am surprised as well as disappointed at the lack of real constructive

criticism which could command the attention of the manufacturers. I would like to offer my comments:

The dual headlight is the most inadvisable innovation forced upon the buying public. The increased width and length of the cars have no necessary or desirable functional value and is a handicap when it comes to parking and garage space, as well as added cost. Increased glass area creates an objectionable hothouse on wheels, and skywatching is not a function of good and safe driving.

Possible second speed starting with automatic transmissions would be desirable.

Ventilation by fan through the heater core is decidedly objectionable. A manually controlled unobstructed path to an outside air-scoop is the most desirable way to bring comfort to the front seat occupants on a hot day.

I cannot go along with the manufacturers' statement that the faster and longer cars are what the public asks for. My favorite car has expanded itself to where I cannot consider it as a replacement for my present 1957 model.

L. L. Cass

Fort Wayne, Ind.

COUNT YOUR BLESSINGS

Dear Sir:

I thought that some of the readers of MOTOR TREND might be interested in the price of U.S. cars in Australia.

First of all, most of the higher-priced American cars are not imported into this country because of the dollar shortage since the war. There is a long waiting list for the cheap '58 Chevrolet model, which costs about \$4500. A '58 Pontiac fitted with an engine similar to the Chevy Six—not the V8—costs over \$5000.

I own a Holden, which is a small General Motors car made in Australia. With a radio and a few extras it cost me almost \$2700.

So you can see that cars in America are still very cheap by our standards, and although our roads are not in the same class as yours, the American car is still a much-sought-after article here.

Ian Sparkes Jandowae, Queensland, Australia

MOST BEAUTIFUL CAR OF YEAR

Dear Sir:

I read the different comments on the '59 Buicks in the December issue of MOTOR TREND. Mr. Runyon had much to say about the new features of the Buick originating from various other cars.

I say that there are few cars that are truly original. In my opinion the '59 Buick is the most beautiful car of the year.

Peter Stimac Jr.

Butte, Mont.

NO PATENT ON STYLE

Dear Sirs:

I will admit that the new Buick does bear a strong resemblance to previous designs of other companies.

However, I do not think that we should say that one car copies from another, since the word "copy" tends to connote some sort of cheating. Perhaps it would be better to say that a popular design or functional object of some sort should be appreciated on any car—no matter what the nameplate may read.
Robert Dorhauer
St. Louis, Mo.

WHO NEEDS DETROIT?

Editor:

So who needs Detroit? If the American people don't want those gas-eating aircraft carriers let them try South Bend. The new Studebaker Lark is the ideal car for the average American family. I got one—it fits the bill just fine.

Let me predict that the Lark will be responsible for the biggest sales gain in the history of the company.

Jack Kramer

Aurora, Ill.

FOUR-YEAR PROJECT

Dear Sirs:

Here is a sportscar which I have recently completed for my own use, representing about four years of spare-time work as a hobby.

Since it is primarily designed as a personal auto, it employs conventional column shifting, bench-type seating, and ample luggage space for two passengers.



Built on a 1939 Lincoln Zephyr chassis, the wheelbase was changed to 103 inches and frame doubled to create a box-member effect. It has 12-inch brakes and rubber-cushioned transverse suspension, which was lowered several inches.

Fenders are reworked and welded together as a unit with other body components, some of which are hand-shaped and -formed.

The car is powered by a 140-hp Dodge V8 engine, and handles and corners well.

Gene Nauth

Kohler, Wis.

WRONG NAME, WRONG ADDRESS

Dear Mr. Woron:

... I am especially grateful for your comment "... tastefully modest" in describing my entry, which was awarded second prize in your recent Car Design Contest (Dec. '58 MT).

I regret, however, that the printers misnamed me "Gordon" instead of C. J. (Joe) Collins, and that my previous address, Sellersburg, Ind., was used instead of the current R.R. 1, Rockville, Va.

C. J. Collins

Rockville, Va.

CORRECT TOYOPET PRICE

Dear Mr. Woron:

Either because of a misunderstanding or misinterpretation, the price of our car has been shown as \$2222 in your January issue. This, actually, is the delivered price of the vehicle, including undercoating, heater, white sidewalls and many other features, as well as the dealers' distribution costs.

The base price of our 1959 Toyopet Crown RSL is \$1989, p.o.e. West Coast.

Jack R. Holmes

Toyota Advertising and Public Relations Director



Competition...

proving ground for a *NEW* engine oil!

D-A SPEED-SPORT OIL is engineered for sports cars, foreign cars, racing engines... for *all* automobiles in severe use. It has been created by the D-A Lubricant Company, the oldest and largest company in the United States specializing in the lubrication of heavy duty mobile equipment. Before being offered to the public, D-A SPEED-SPORT OIL was subjected to more than six years of intensive testing in all forms of automobile racing—from the Indianapolis "500" to Elkhart Lake—and in countless miles of normal street driving. Laboratory analysis of

drain samples PROVES... D-A SPEED-SPORT OIL eliminates cam wear and piston scuffing, prohibits foaming, prevents formation of varnish, sludge and dangerous exhaust valve deposits and maintains proper thickness under all conditions.

Specify D-A SPEED-SPORT OIL, the oil engineered for the motorist who knows about... and cares about... his car. NOW AVAILABLE: D-A SPEED-SPORT GEAR LUBE, the only lubricant on the market designed specifically for use in competition automobiles.

Dealer and Distributor inquiries invited—Write to: Mr. Roy Sherman, Racing Div., D-A Lubricant Company, Inc., 1331 W. 29th St., Indianapolis 23, Ind.

Racing Division **D-A LUBRICANT COMPANY, INC.**
Indianapolis 23, Indiana

SPOTLIGHT ON

DETROIT



by Bill Callahan Detroit Editor

ALL-ALUMINUM CARS may be closer than we think, though there is much division of opinion in Detroit as to just how quick. Kaiser Aluminum put on a very dramatic exhibition here late in December which included some rather definite specifications and a three-eighths scale model of an all-aluminum car "for the immediate future." This car, called the Pele (Paylay), according to Kaiser, could actually be manufactured on existing production lines by substituting aluminum for cast iron and steel in many parts. It would be aluminum from bumper to bumper.

THE FRONT BUMPER would have extruded aluminum center sections terminating

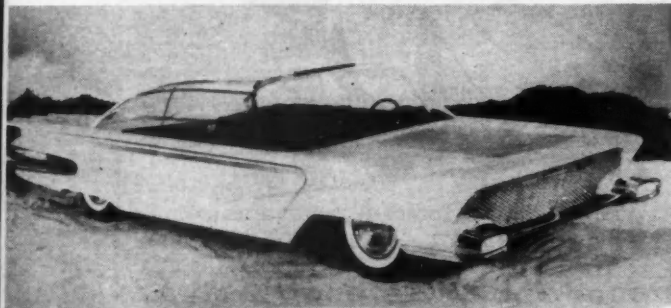
cast aluminum to reduce weight and run cooler.

ALUMINUM FRAME would be built up from die-cast aluminum section and extrusion. The firewall would be a cast member that would include the toeboard section of the floor, the instrument panel, part of the heater and defroster ducts and door hinge posts. The front face of this casting would carry pads and bosses for mounting engine and accessories. Cores in the casting would form holes for wires, tubing and other controls. Other cast panels would carry remaining floor sections containing driveshaft tunnel, and seat riser. The frame rail sections proper would be extrusions bolted to the firewall section

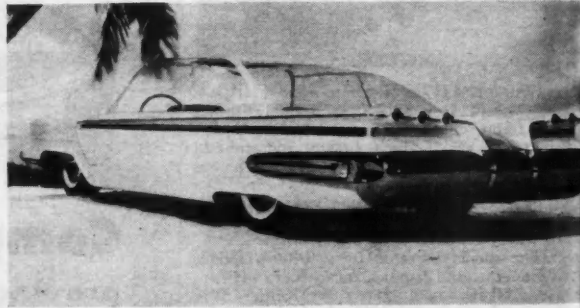
and the other floor casting to form a rigid platform. All that is still needed is the V8 all-aluminum engines called for in the specs.

THIS MAY ACTUALLY not be too far off, for Detroit engineers are giving much study to this subject. This is indicated by GM's announcement of its successful tests with an experimental aluminum engine. In a recent talk before the Society of Automotive Engineers, Chevrolet's Manager Ed Cole put light metals at the top of his list of challenges facing automotive engineers today.

"ALUMINUM V8 ENGINES," he said, "are being experimented with that weigh one-third less and have higher compres-



This design for an all-aluminum car, suggested by Kaiser Aluminum, features aluminum bumpers, honeycomb grille, roll-away hood door.



Named the Pele (Paylay), the proposed aluminum car calls for an aluminum frame, engine, radiator, die-cast doors and anodized trim.

in cast aluminum pods which serve as attaching members. The radiator would be all aluminum, soldered. Grille can be made of expanded metal, perforated sheet, built-up rolled form sections, built-up extruded section and perforated extruded panels, all finished in bright anodized aluminum. Muffler would be located in the front fender pods and be of cast aluminum. Brakes and wheels would be integrally cast, with wheel hub and drum in one casting, as already developed by Kaiser. Hood would be sheet aluminum with sheet side panels. Doors would be of die-cast aluminum with sculptured exterior. The automatic transmission would have case, valve bodies, covers and other major components of aluminum, as they are on most cars at present. The differential housing and cover would be made from

LATEST ON FORD'S SMALL CAR!

FORD MOTOR CO. definitely will enter the small car field late in 1959 with a completely home-grown product designed to meet American needs. Contrary to reports from Europe that Ford was having a car designed by its stylists at the German Ford plant at Cologne, the new Ford product design was completed here in Detroit. While details are meager, the U.S. car will be slightly larger than the German Taunus, which, by the way, was largely designed by Wesley P. Dahlberg of the Ford Styling Section here. The new car will be comparable in size to the Rambler Rebel and will be powered by a six-cylinder overhead valve engine similar if not identical to the present six which develops around 135 hp.

sion ratios than comparable cast iron engines. They offer less cost in manufacture and better performance and economy. There are serious problems to be licked before these engines can be put into production but early reports are encouraging."

FORD'S 1959 CARS use as much as 68 pounds of aluminum per vehicle against 35 pounds in 1957, according to C. H. Patterson, Vice President of the Power Train Group for Ford. He has made the prediction that within the next five years the average passenger car will contain from 100 to 120 pounds of aluminum. Both Cole and Patterson agree that aluminum will come eventually—or as soon as auto engineers learn how to apply it in further reducing car weights and developing more efficient engines.

► **Kaiser spurs Detroit consideration of aluminum for bodies and engines**
 ► **... "Big vs small car" debate continues, as early '59 sales are closely**
 ► **studied ... Chrysler introduces 300-E ... "Boss" Kettering dies at 82**

CHRYSLER 1959 LINES already are using more than 100 pounds of aluminum per car, with the possibility of this figure increasing, James C. Zeder, Vice President in Charge of Engineering, pointed out recently. "We are definitely aiming at substantial reductions in car weight, and aluminum and magnesium seem to offer the best possibility," he added.

PROBLEMS STILL TO BE LICKED in the development of an all-aluminum engine were the topic of an SAE meeting in Detroit in December. Leonard C. Rowe of GM Research Laboratories pointed out the challenge that pitting and galvanic corrosion still pose. He urged chemical manufacturers to spur studies to determine the effect of water impurities and heat transfer on the corrosion of lighter metals, and the effectiveness of inhibitors in low velocity cooling areas.

BIG VS SMALL CARS is a very moot question in Detroit today as pipelines are rapidly filling with 1959 models. Public acceptance of these offerings have been reported good where cars have been available. But, early sales trends have been blurred by shortages and delays in delivery caused by sporadic strikes.

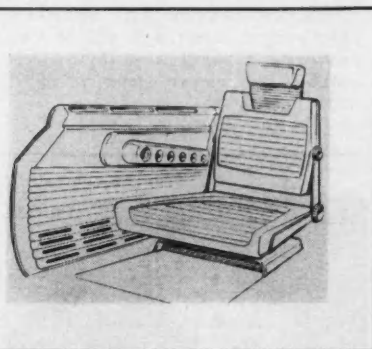
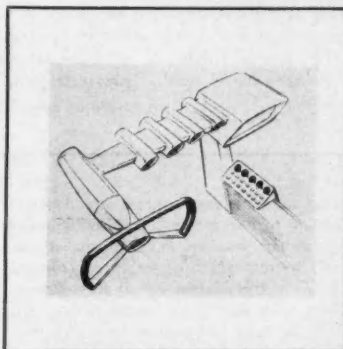
BUYERS' CHOICE among the U.S. "big car" offerings is difficult to evaluate at this time because of the inventory situation.

Behind this, the industry is watching closely to see whether more definite sales trends indicate any strong demand for the small imports and more compact American offerings. Consensus is that if small cars and compact cars show real strength in early sales as against the bigger and more ornate 1959 lines, there may be some quick switching all down the line. Usually reliable *Ward's Automotive Reports* stated late in November that both Ford and Chevrolet would offer smaller models early in 1959, with Chrysler following in 1960. *Ward's* pin-pointed its prediction by saying both Ford and Chevy would be built in plants in the Detroit area, but hedged a bit on Chrysler plans.

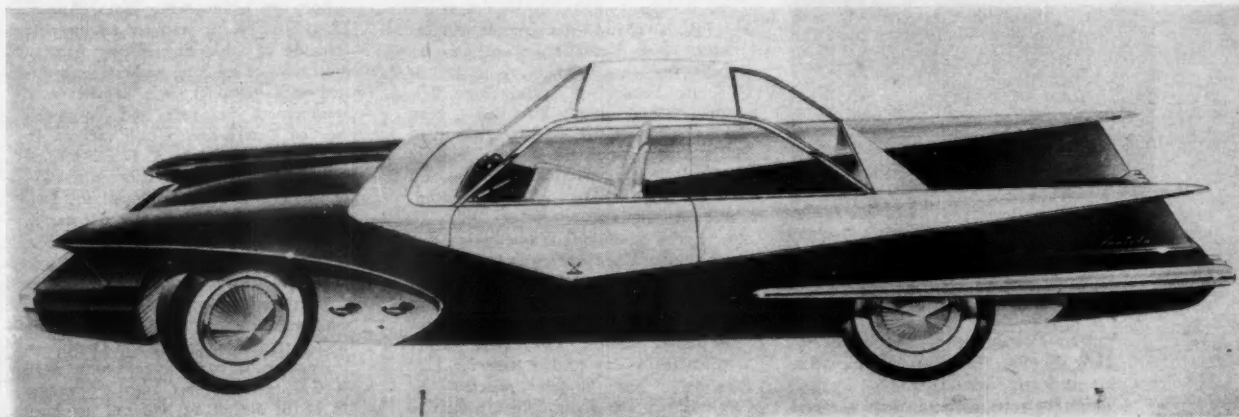
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From Kaiser designers: aluminum swivel bucket seat, foam pad, adjustable head rest.

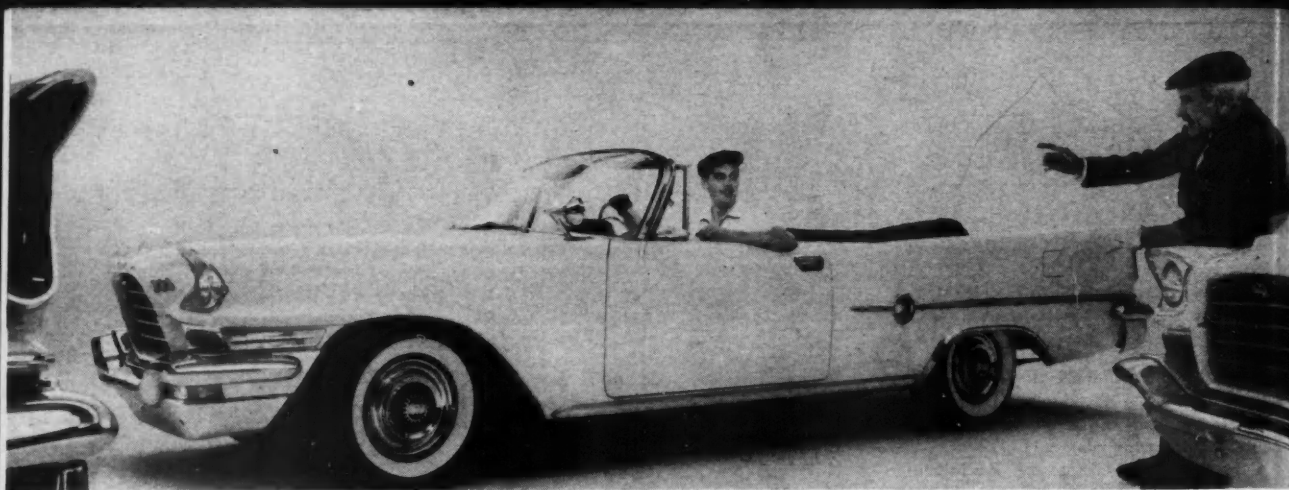


One aluminum casting incorporates steering mechanism, instrument cases, switch panel, radio enclosure. Textured aluminum sheet-covered door contains heating-ventilating-defrosting ducts.



Aluminum "Paneole" is Kaiser's design for combination four-passenger sportscar and light pickup. Rear window folds up, partition

and rear seats fold down to accommodate cargo. Car has horizontally-opposed air-cooled aluminum engine with front-wheel drive.



Rugged be-man sportscar styling still characterizes Chrysler's 300 series. Horsepower remains at 380, but gear ratios permit faster acceleration.

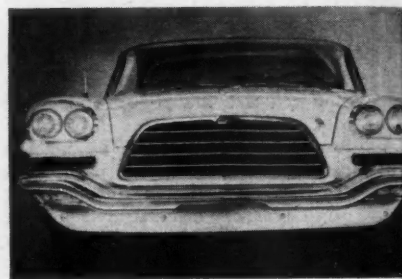
Spotlight on Detroit

continued

OTHER NEWSMEN HERE generally discount the *Ward* report on the basis that the target date is too early, even though a definite plan to enter this field had been approved. Companies involved, of course, will make no comment. There can be no question that sales trends are being closely watched in all front offices. Our opinion is that there will be some shrinkage in overall size in 1960 models, even if no "compact" lines are added.

THE FIFTH EDITION of the 300 series by Chrysler, the 1959 300-E, was introduced in December. Major engine changes include a redesigned, 100-pounds-lighter, 413-cubic-inch block, twin four-barrel carburetors, modified intake manifold and camshaft. Horsepower remains at 380 at 5000 rpm, with 450 pounds-feet of torque at 3600 rpm. TorqueFlite transmission and 3.31 rear axle are standard, as are heavy-duty suspension and shock absorber systems. The special exhaust system carries oversize stacks with "low-restriction" mufflers.

continued on page 75



300-E retains its racing-type, funnel-shaped grille flanked by aircoops for front brakes.



Noted for his automotive research and inventions, "Boss Ket" was a born do-it-yourselfer. Here he breaks ground for GM's Tech Center.

MECHANIC-SCIENTIST Charles Franklyn (Boss Ket) Kettering has made his final trip from Detroit to Dayton, Ohio. For years, as head of the General Motors Research Laboratories, he led in the development of things automotive

that added safety, comfort and dependability to our present cars. Best known, of course, was his development of the self starter, which probably contributed more to the general use of the automobile than any other single device. All told he held 140 patents on automotive devices that amassed him a fortune. Activities included participation in the development of Ethyl gasoline, better brakes, synchromesh and automatic transmissions, lighting systems, safety glass and more efficient lubricants and engine designs.

Tall, lanky and with Lincolnesque features, "Boss Ket's" big forte was his ability to inspire others as a sort of "Knute Rockne of engineering." His grave manner poorly disguised a keen sense of humor. He liked to muse about such things as how the bumblebee defies all laws of aerodynamics and can take off from a standing start while aerodynamically it cannot fly.

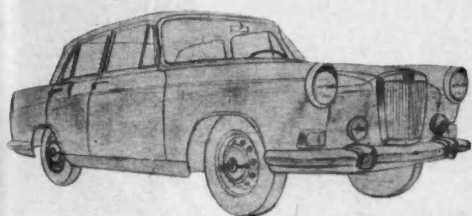
"Ket's" shunning of ostentation was not a pose. When in Detroit he occupied a quiet suite in the Sheraton-Cadillac Hotel. When ground was broken on a barren wasteland north of Detroit for the now beautiful GM Tech Center which houses his former Research Laboratory, "Ket" loudly rejected the splendor of the plans. "All I want is a workshop," he opined.

He encouraged young men to work

with their hands. While his mind leaned to science his heart was in mechanics and he liked to be known as "an executive with a wrench." He had little interest in money, but most of his donations were for research rather than outright charity. He was a large contributor to the Sloan-Kettering Institute for Cancer Research, and to fever therapy research at Dayton's Miami Valley Hospital. He also made large donations to Antioch College to study his question of "why grass is green."

Born at Loudonville, Ohio, August 26, 1876, "Ket" was an engineering graduate of Ohio State Univ. After a short term of teaching he became associated with National Cash Register as a development engineer and developed the first electric-driven cash register. In 1909, he and Edward A. Deeds formed the Dayton Engineering Laboratories Co. (Delco), where he developed the Delco ignition system and the self-starter, first used by Cadillac in 1910. In 1916 Delco was sold to United Motors Co., and later became part of General Motors.

"Ket" suffered two strokes in his Dayton home after returning from a farewell party for Harley Earl in Detroit on November 20. Earl was retiring as head of GM Styling. "Ket" died November 25 at the age of 82. He had not been active in GM since 1947, but his influence and inspiration will live on.



THE RUMOR MILL

"Is this the new MG Magnette?"

POSSIBLE—From what we've heard about the way it might look—Italianesque in design—this conjectural sketch might be close.

"Henry Kaiser is working on a new version of a small car, based on the Willys chassis."

POSSIBLE—Reliable informants tell us that feelers are out for designs on an up-to-date version of the Willys two-door hardtop of 1955. It's only in the talking stage at the present time, so nothing may come of it. One thing we know for sure—we'd welcome it back, even in its older form.

"All GM cars will be all-new in 1960."

TRUE—Under its present program GM lines share basic bodies and it is understood GM plans new basic bodies each year, which would also mean new sheet metal. This is about as close as any cars come to being ALL new.

"One of the Big Three will have flip-tops in 1960."

POSSIBLE—but not probable. As cars become lower it will be necessary to extend doors higher into the roofline. This can be done without using overhead hinges à la Mercedes 300-SL.

"A new version of the Gaylord special in the luxury car field will soon make its debut."

TRUE—This car already has been completed, and first details will be available in MOTOR TREND as soon as Midwest weather permits extensive testing.

"You can't have your '59 Pontiac washed on all automatic wash racks because of its wide tread, which most automatic wash systems were not designed to handle."

TRUE—Automatic Car Wash Association reports its members may have to spend as much as \$1.5 million to revamp washing lanes, which are now too narrow.

"A deal has been made to start stock car races at the former Packard Proving Ground high-banked, oval track at Utica, Mich."

PROBABLE—As this was written no official announcement of such an arrangement

had been made, but the rumors in favor are very strong. If true it could revive factory interest in racing.

"Detroit is working on an engine that will operate in a car without a transmission of any kind."

TRUE AND FALSE—This rumor probably resulted from a statement made recently before the Detroit Section of the SAE by E. N. Cole, Chevrolet General Manager. He said that such an engine was badly needed. The industry unquestionably is trying, and the nearest approach seems to be a turbine or free-piston job, which are both still some distance away.

"One of the Big Three will have trans-axle design in 1960."

PROBABLE—Trans-axes combine the transmission and differential in a single unit at the rear axle using independently sprung rear wheel patterned after de Dion. This provides a fixed angularity for the driveline, enabling engineers to eliminate transmission hump and driveline tunnel. Designs are so nearly complete we felt it might appear on this year's Lincoln or Continental.

"Most GM cars will have aluminum engines in 1960 models."

DOUBTFUL—GM has developed some experimental aluminum engines, but latest dope is that much work must still be done before they can be placed in production. Studies of the corrosive effect of water in various parts of the country, as well as anti-freeze solutions, are now being made. This may determine how quickly these engines could be made available nationally.

"Gasoline turbines will be available in mass-produced cars within five years."

POSSIBLE—Prof. Frank L. Schwartz of the University of Michigan says such an engine could be mass-produced by 1965. It would be no larger than current engines and would produce 200 hp on either kerosene or fuel oil. It would require less lubricating oil, no liquid cooling, and no transmission.

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**with Boron Detergent
Action Electrolyte**



Recent top-secret jet and rocket research has revealed the amazing capabilities of the element Boron and its various compounds. Now a new Boron compound makes possible an automobile battery with greatly increased capacity, better performance and longer, trouble-free service life—a battery so powerful and durable that it carries a 7-Year Warranty.

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BOROLYTE BATTERY COSTS LESS

The Borolyte 7-Year Battery costs as little as 37¢ per month. Compare this with a typical 12-month battery at \$9.95—costing you 83¢ per month! End your battery troubles, cut your battery expense with a Borolyte.

Most 6-volt Borolyte Batteries cost only \$32.50; most 12-volt Borolyte Batteries \$34.50 (some extra heavy duty sizes slightly higher).

If you prefer, order through your service station or garage dealer. Ask him to write for full information.

Pending appointment of local distributor and dealers, you may order direct. Send \$10.00 deposit, state your car's make, model, and year, give your name and address. We will ship Borolyte Battery C. O. D. (less deposit) and pay all freight charges. Satisfaction guaranteed.

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MOTOR TREND/FEBRUARY 1959 13

MOTOR SPORTS

PICTORIAL



Ken Parker got them coming over the hill and around the bend in this month's First Prize photo. Scene is Laguna Seca sportscar races at Fort Ord, Calif. and subjects are a gaggle of production sportscars including a quartet of Porsches, an MG-A, Austin-Healey and Jaguar.

MOTOR SPORTS, U.S.A.

Sebring U.S. Grand Prix race (March 22) and 12-hour World Championship sportscar enduro (March 21) are shaping up. Ferrari has requested entries for three cars in each event . . . Private charter flights are being scheduled from around U.S. and overseas. Veteran and antique cars will drive on Friday (March 20), same day the Grand Prix cars will practice. Point of interest is that Sebring G.P. is listed as an F.I.A. Championship event along with Indy. Normally F.I.A. restricts each country to one point-counting G.P. per year. But because Indy has not been a true formula event for years, special dispensation was granted for two events in the U.S. Indy counts for drivers only, while Sebring counts for drivers and cars . . . Freddie Agabashian, veteran Indy competitor, retires from racing. He joins the public relations department of Champion Spark Plug promoting a highway safety program for teenagers and service men . . . USAC championship for car owners won by Racing Associates, Indianapolis. Car is the D-A Lubricant Special, driven by Johnny Thomson to four victories and two seconds in the last eight championship races of the season . . . USAC plans

scientific evaluation of crash helmets . . . Stock car specifications for 1959 USAC-sanctioned races do not permit fuel injection or supercharging . . . NASCAR's 1959 point season was kicked off November 9 when Bob Welborn won a Grand National victory in his '57 Chevy over the Fayetteville, N.C. course . . . The traditional Thanksgiving Midget Grand Prix at Gardena, Calif. Stadium was run Monza style in three 50-lap heats. "Bullet" Joe Garson, 50-year-old veteran who often shows younger drivers his exhaust fumes, won the first heat, placed fourth in the next and third in the final go for an overall win. The crowd liked this method of racing. We will probably see more . . . Want to see how fast you can drive? Century Club runs over the measured mile at Daytona Beach will be run February 15-19. This gives any driver a chance to see if the family car will break 100 mph on Daytona's hard-packed sand. NASCAR certificates showing exact speed will be given all entrants . . . New record for gasoline-powered dragsters has been set by Art Arfons, Akron, and his Allison-engined Green Monster. Arfons drove 168.89 mph at McBrides, Mich. . . The Sports Car Club of America has liberalized

HAVE A CAMERA?

Then you can win in MT's monthly photo contest. We're looking for the best photos taken each month in the field of motor sports—whatever they might be. And we'll pay \$25 for 1st prize, \$15 for 2nd, \$10 for 3rd. If we select a photo sequence, we'll pay the place award, plus \$7.50 for each additional shot. Photos should be black-and-white glossies, 8x10s preferred, with 4x5s minimum size. Identify all photos with names, dates, locations. Don't send negatives. Photos cannot be returned. Send to MT Motor Sports Pictorial Contest, 5959 Hollywood Blvd., Los Angeles 28, Calif.

its views toward professional drivers. SCCA members will not be allowed to accept prize money, but members may accept reasonable traveling and living expenses. Also, they may participate in other amateur or professional events, providing events are approved by SCCA and drivers retain their amateur status.

INTERNATIONAL ROUNDUP

Nassau Speed Week was boiled down to four days this year—unexpected tropical rains. Not surprising was the showing of Lance Reventlow's Scarabs. The youthful millionaire set a practice record of 91 mph around 4.5-mile Oakes Field and managed to win outright the 25-lap Governor's Cup Race on December 5. He topped that by sharing victory in the feature Nassau Trophy Race with teammate Chuck Daigh, whose own Scarab failed with a broken half-shaft. Major competition was Carroll Shelby in a 5.7-liter Maserati. A

continued on page 20



Lawrence Kadoorie proves that sportscar racing is popular the world over by submitting this Third Prize photo of action on a hairpin turn at the November 16th sportscar Grand Prix held in Macao, a Portuguese Colony near Hong Kong.



Pvt. Joe Fogel captured Second Prize and some exciting action with this shot of a German motorcyclist at the International Moto-Cross held at Nancy, France. Safe landing appears impossible but rider made it.

NEW...different

Dual Action

MOTOR OIL

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RUNNING ENGINES



Short trip city driving causes "cold engine" sludge that promotes excessive wear. Long trip "hot engine" highway driving produces power-robbing piston and valve varnish. New Kendall Dual Action Motor Oil solves *both* problems... sells at the *regular* price.

Ask your favorite dealer for it now



SPORTSCARS SPECIALS, by writer-photographer Bob Rolofson, is an interesting collection of weird and wonderful specials built by those with "... a driving ambition to put esthetics into concrete form." West Coast driver Ken Miles explains the background of his favorite specials. The author presents many details about 32 specials (both well-known and little-known), describes the many fiberglass bodies available on today's market, and reveals a different kind of dream car—one assembled from the best sports and GP cars in the world, to the specifications laid down by Stirling Moss. At 75 cents, this Trend book is one for all who admire the "backyard bombs."

L'AUTOMOBILE is a book we most certainly enjoyed looking at, for its 550 pages are filled with photos (in black-and-white and color), easy-to-understand technical drawings, and a complete explanation of the problems of designing and producing a car. Unfortunately, it's all in French. In English, or if you read French, at \$11.75 this could be one of the handiest reference books you could add to your automotive library. We'll be looking for an English edition from the Librairie Larousse of Paris.

MOMENT OF IMPACT is Joseph Bailly's first novel—and we sincerely hope he never writes another one like this. It has a most unrealistic plot, and dialogue that is equally unreal.

Here's the "plot": The "hero" is a former racing driver who owns a plot of ground with a restaurant and hotel placed between two four-lane highways. He's been in prison on a manslaughter charge of killing his mistress' husband in a car accident. He comes back to take up life with her again and at the same time searches (not very hard) for the hit-run driver who killed his wife. His brother is trying to take the "island" away from him. The "hero" is teaching the son of his mistress to race, while the "bad cop" is trying to prevent it. Had enough?

Dialogue? He calls his mistress Mrs. Watson up until the time he marries her. Two old friends sprinkle their conversation with each other's names like there were six other people in the room.

It's a surprising novel to come from Atlantic, Little, Brown & Co.

THE MOTOR has again compiled a list of specifications and prices of all 1959 "British and Foreign Cars" for the nominal price of one shilling (14 cents). It's a handy little booklet you can carry in your pocket when you're out shopping for a car or when you want to quote specifications, chassis details, or performance data.

Available from Temple Press Ltd., Boul-

Chicago 16, Ill.

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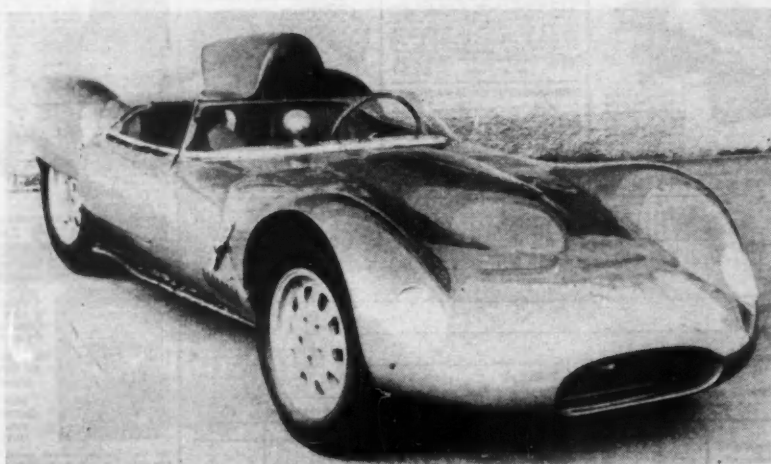
A monthly summary
of the latest foreign car news
from our overseas correspondents



Handsome Triumph TR-3 coupe at Turin Motor Show was designed by Michelotti, built by Vignale. Radiator air duct is completely below bumper. Will this influence rumored TR-4?

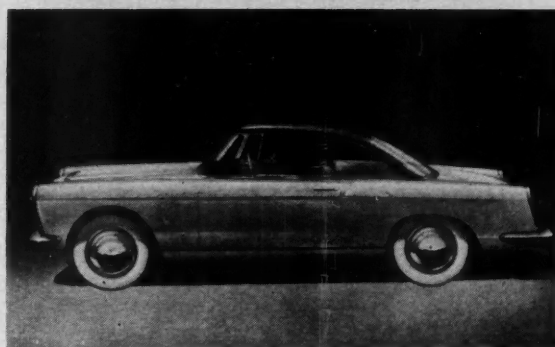
ENGLAND Since the first of the year, the Rootes Group has been shipping 3000 Humbers and Hillmans a month to the U.S. The Humber being exported is the new 2.6-liter Super Snipe with six-cylinder engine. Singers are also being sent to the U.S. but the neat little overhead cam engine has been dropped. Now Hillman and Sunbeam spare parts can be used . . . The Turner sports car with Morris Minor 1000 engine continues for 1959 but with larger front brakes, 8 by 1½

inches with two leading shoes. A new model, basically the same car but with a Mark I 1100cc Coventry Climax engine is now being shipped to buyers in the U.S. and South Africa. One of the first Turner U.S. outings was a second place in Florida's six-hour Sam Collier Memorial Race. Distributor for Turner in the U.S., except Florida, is Tri-City Sports Cars of Massillon, Ohio . . . One of the first Mark IX Jaguars was delivered to Queen Ingrid of Denmark, her third Jag . . . Frank



New 1500cc Osca sports-racing car uses basically the same tubular chassis as in last year's Sebring Index winner. Body is more streamlined, lower, lighter. Front and rear open à la Lotus.

Costin, stylist and aerodynamics expert who designed Vanwall's G.P. cars, is collaborating with Brian Lister for the '59 Lister sports cars . . . Over 100,000 British Fords were shipped to the U.S. in 1958. Shipments during the first half of this year will be 50 per cent above the 20,000 shipped in the same period last year . . . Vauxhall claims that their Victor is currently the largest selling single British model on the U.S. market . . . The crossed flag motif on rear fenders of the new Standard Vanguard represents letters of international signal code—a V for Vignale, the car's designer, and S for Standard . . . London visitors who remember the city's ancient taxis are in for a surprise. Latest is a fully streamlined Austin cab with Borg-Warner automatic transmission. Power is from a BMC 2.2-liter, 55-horsepower diesel . . . R. Gresham Cooke, a director of Rootes, wants Britain's 60 per cent auto purchase tax reduced. He pointed out that jewelry carries only a 30 per cent tax. He feels that automobiles are such a necessity that they cannot be counted as twice as luxurious as jewelry . . . Armstrong Siddely, part of the huge Hawker Siddely aircraft group, have introduced their luxurious Star Sapphire. Engine displaces 3.9 liters and develops 165 hp. Power steering, disc brakes in front and automatic transmission are standard. Base price without tax is just under \$5000 in Britain . . . British exports of cars and parts brought in nearly \$1.5 billion in foreign currency, mostly from the U.S. Next best contributor was Australia with South Africa and Canada following . . . Borg-Warner automatic transmission is now used on 26 British autos including Rolls-Royce . . . Dunlop, Girling and Lockheed seem to have arrived independently at the same solution for a commercial disc brake. They are all producing designs with fixed calipers having two operating pistons, one on each side of the disc, and segment-shaped pads instead of the circular lining buttons used experimentally . . . Performance of the new Aston Martin DB-4 was understated. Claim was that it could accelerate to 90 mph and brake to a stop in 30 seconds. In tests the car completed six such runs in six minutes and average time was 27.2 seconds . . . A Rootes Group showroom, catering especially to Americans, has been opened in London. All display models are left-hand drive and price tags are marked in dollars. The staff will be equipped to handle sales to military personnel, government officials and tourists who qualify for exemption from purchase tax . . . The new Wolseley 15/60 is the first BMC model with a Farina-designed four-door sedan body. Lines have been kept simple and in good taste. U.S. buyers will



Turin show had varied examples of Fiat-based coachwork. Smart station wagon, upper left, is from Carrozzeria Giardinetta by Ghia on Fiat 1100 chassis. Headlight-grille treatment of coupe by Ghia, upper right, suggests Nash, is on 1200 chassis. Lower left, Francis Lombardi designed a utility car on Multipla chassis, and lower right is Farina-designed 1500cc twin-cam sportscar.

not be able to buy it but reports are that the body shell is destined for other uses at a later date. Look for it on one of BMC's export sedans . . . Cooper intends to go all out in the manufacture and racing of Formula 1 cars this year. Hopes will be based on the 2.5-liter Coventry Climax engine which delivers 230 bhp. Continued will be the highly successful Formula II program. Also new at Cooper is a redesigned sports-race car for this year. The frame has been broadened, and suspension is similar to the Formula cars. In 1½- and two-liter versions, it could present a serious challenge to Porsche.

INNER MONGOLIA The Communist radio indicates that Inner Mongolia will soon begin

production of automobiles specially designed for the country's desert wastes and steep mountains. Maybe for getting into Outer Mongolia?

UNITED STATES Germany's Goliath will be retailed throughout the Midwest in Gamble-Skogmo-Western Auto stores . . . Here's a switch in sportscar marketing. Alken of Venice, Calif., has shipped the first of its fiberglass bodies, designed exclusively for the VW, to Pema Trading in Stockholm. Firm will be Alken distributors in Europe and bodies will eventually be manufactured there from American-made molds . . . Mercedes-Benz sales in the U.S. are currently running double the anticipated rate. Monthly total

for 1958 exceeded 1000 cars per month or about 12 per cent of M-B production. Sales trend is swinging toward the 220 four-door sedan, currently accounting for about 25 per cent of all U.S. orders . . . Renault is experimenting with shipping spare parts to the U.S. by air. They expect to cut costs while time saved in shipping is as much as two months . . . September 1958 was a boom month for import sales. Total was a record-breaking 11½ per cent of all new cars registered in America. Anyone still believe imported cars are a passing fad?

ITALY According to the Abarth Co., their resources are really inexhaustible; no sooner is one record attempt completed but another

continued on page 66



Contrast in Lancia Flaminias was provided at Turin by 108-inch wheelbase coupe by Touring, above left. Car has 112 mph top speed. Zagato built other Flaminia on 99-inch wheelbase. Roofline is grooved in typical Zagato styling touch. Both cars have 131-horsepower V6 engine.

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MOTOR SPORTS

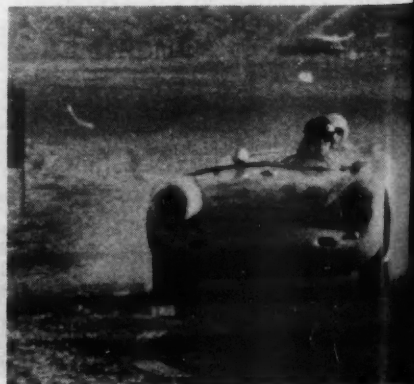
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broken battery cable kept Shelby from restarting after he pitted on the 15th lap with a shredded left rear tire. Reventlow and Daigh averaged 87.5 mph for the 252-mile event. Those "under-age" Mexico City boys, Pedro and Ricardo Rodriguez, were in with the best. Ricardo won special Porsche races December 5th and 6th. Also on the 6th, brother Pedro came off second in a three-liter Ferrari to Californian Bruce Kessler. Pedro returned next day for another second place in the feature race behind Reventlow . . . Europe's professional racing drivers' union threatens to create a separate world championship series of Grand Prix races if the F.I.A. does not liberalize the new 1½-liter Formula 1 . . . Car builder Enzo Ferrari much upset about the new formula. He was in favor of continuing the present formula until December 1961 with the use of premium grade fuel instead of aviation gasoline. He also feels that the big speed events should be limited to permanent or semi-permanent circuits which are the



Photographer Lennart Hult shot a flying Volvo in the Swedish Midnight Sun Rally.

only ones capable of giving proper protection to both drivers and spectators. Ferrari claims that the current three-liter sportscar racing formula serves no useful purpose. "Nobody wants to buy one but a two-liter sports-racing car can be the basis of a model for sale to the public and would yield technical information of direct value to everyday production." Finally, Ferrari is a strong supporter of the Gran Turismo Formula. He knows that it has a direct commercial application because his own



Laguna Seca sportscar races provided plenty of action in under-2000cc modified event.

250 Gran Turismo machines are now being built at the rate of one per day. He strongly opposes all modifications which tend to transform the G.T. car into a sports-racing machine. "The success of this formula is entirely dependent on the strictness with which the original regulations are applied," he said . . . International rally enthusiasts will be interested in the 1959 East Africa Coronation Safari, March 27-30. An F.I.A. event, it will range through 3200 miles of Kenya, Tanganyika and Uganda along some of the toughest roads anywhere in the world. Natural hazards include extreme cold, blazing heat and cloud-bursts. One competitor last year collided with a giraffe, while another came off second best in a crash with a hippo. Write Coronation Safari, P.O. Box 87, Nairobi, Kenya, for information . . . First four positions in the 737-mile Automobile Tour of Corsica November 8-9 were won by Renault Gordini Dauphines. Out of 66 entrants, only 23 finished the 14,000-turn mountain course . . . Stirling Moss, driving a two-liter Cooper Climax, won the 100-mile Melbourne, Australia sportscar Grand Prix, setting a new record of 98.86 mph. Following were Jack Brabham in another Cooper-Climax and Doug Whiteford in a three-liter Maserati . . . London papers report that 1958 World Champion Mike Hawthorn will quit motor racing. If true, the 29-year-old driver will be pulling out at the peak of his career. Decision was supposedly made shortly after the season's final race at Casablanca . . . French driver Jean Behra drove his three-liter Gran Turismo Ferrari to victory in Venezuela's 469-mile road race on November 23. He took the lead on the first 96-mile leg through the oil fields of Western Venezuela and was seldom out of first place. Next three finishers were similar Ferraris. Behra averaged a fantastic 96.9 mph and stated that his co-driver, Jean Lucas, was sleeping most of the way. Outstanding was Germany's Baron Huschke von Hannstein in a Porsche. He passed the first 30 starters midway in the race and was first across the finish line at Caracas for first in class and seventh overall . . . The fifth Macao Sportscar Grand Prix, 60 laps over the 3.8-mile Guia Circuit, resulted in a resounding victory for Chan Lye-Choon of Singapore driving an Aston Martin DB3-S. This was the first time that a winner had not been a Hong Kong resident and the first time that a winning driver had been Chinese. The winner is the only Chinese member of the British Racing Drivers Club.



Ken Miles, who finished second, prepares to pass Charles Howard's third-place Cooper.



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CHEVROLET



BIG THREE

FORD



ROAD TEST

PLYMOUTH



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HOW THE CHEVY, FORD AND PLYMOUTH COMPARE IN PERFORMANCE, MILEAGE, HANDLING AND BRAKES

The ideal multiple road test would be the one with you, the reader, taking your turn behind each wheel, comparing standards of engineering, workmanship, passenger comfort and performance in the same objective manner we look at all new cars. Obviously, this is impossible. In this, MT's first three-way road test of the '59 models, we have attempted to do the next best thing—answer the questions we think you would ask if you were able to put these cars through the same paces. Interpreting our findings in the light of your own needs and preferences should help you to better evaluate these cars—and make your choice much easier.

—The Editors

by Charles Nerpel, Technical Editor

What type of car was tested?

CHEVROLET Impala series four-door sedan, powered with the optional 348-cubic-inch engine with three two-barrel carburetors, 9.5 to 1 compression ratio, developing 280 hp. A Turbo-glide transmission driving through a 3.08 rear axle completed the drivetrain. Power steering, power brakes, radio, heater.

FORD Ford Fairlane 500 four-door sedan with 352-cubic-inch V8 engine, four-barrel carburetor, and 9.6 compression ratio, developing 300 hp. Power assisted brakes, power steering and new Fordomatic two-speed automatic transmission with 2.91 rear axle ratio. Radio and heater.

PLYMOUTH Plymouth Fury four-door hardtop, with Golden Commando engine package and TorqueFlite automatic transmission. Optional on all Plymouth V8 models, the Golden Commando package is a 361-cubic-inch engine with a four-barrel carburetor and 10 to 1 compression ratio rated at 305 hp. Pushbutton-controlled three-speed automatic transmission and 3.31 rear axle ratio. Power steering, power brakes, electronic mirror, pushbutton radio and heater, and front and rear rubber bumper protectors. In 1958 the Golden Commando package automatically included heavy-duty shocks and suspension, but this year they must be ordered or the car will come through with standard units. Factory-installed, the additional cost is \$8.60.

How well is it put together?

CHEVROLET Assembly and finish look very good. There are no visible raw edges and the interior is well finished off, but a feeling of solid construction is lacking as slamming any of the doors produced rattles that indicated looseness throughout the body. The dome light, mounted in the roof center, was very loose and rattled over minor bumps or when the doors were closed. Upholstering is neat and in fabric-plastic combinations of about the same quality as the competitors. Headliner is wrinkle-free and low-reflection plastic-covered padded cowls are almost identical in their treatment by the Big Three manufacturers. Chevrolet's is done in similar style to minimize windshield reflection and protect front-seat passengers from minor contact with the top of the dash. This year the front door jam—where it borders the bottom of the wrap-around windshield—is smoother and better finished.

FORD Finish and detailing of the test car was good. There is a solid feeling about the body that is more pronounced than Chevrolet or Plymouth. Doors fit well as do the rear deck lid and front-hinged hood. Quality control seems good so far this year as there were no raw edges in the interior, and the headliner and trim panels were smooth and without wrinkles. Windows wind easiest of the Big Three. Ford has fabrics similar to those used generally in the automobile industry combined with plastics for upholstering and dash padding.

PLYMOUTH Basically the car is well put together. Hardtop models with vertical cantilever center posts require more careful and accurate assembly than full center post bodies. There are still wide tolerances for door fits that are made up with the rubber sealing gaskets. Around the top of the Fury doors where they meet the center post, ordinary use had already loosened the rubber to where it protruded when the door was closed. This seems to be an engineering discrepancy, but badly wrinkled covering on the trim panel behind the rear seat is definitely poor quality control. The method of securing the glove compartment lock to the door is going to give continued trouble. Twisting the key too hard not only disengages the lock but allows it to fall out of the panel. Perforated hardboard headliner does a good job of finishing the interior, and is not a dust catcher, as it has a smooth finish. The factory claims that water leakage around the dummy spare tire on the rear deck that gave some trouble in last year's cars, has been eliminated with better sealing around the mounting screws. Automotive fabrics of synthetic fibers interwoven with natural threads have done much to increase their durability as far as scuffing wear and sun rays (two of the enemies of upholstering materials) are concerned. Plymouth has taken advantage of these new materials for their interiors, often combining them with plastics to achieve a variety of color choices for the buyer. Dash cowls, padded with low rebound material and covered with reflection-reducing plastic, provide reasonable safety against sudden stops.

Is it easy to get in and out of?

CHEVROLET About the same as Ford, easier than Plymouth, especially from curb height. Bottom of steering wheel clears seat with room to spare for average persons, but rougher-surfaced fabrics and softer padding make sliding in and out a little more of an effort.

FORD Door opening and seat height from ground level are sufficient to allow easy entrance and exit, even from curb level. There is a little more room between wheel bottom and front seat than in the Plymouth. This will be welcomed by the long-legged or the stocky, but with the trend in modern cars, passengers and driver have to bend just a little more than they did five years ago.

PLYMOUTH Lower rooflines have gradually made the passenger more flexible; i.e., he has to bend just a little more to enter the vehicle. The doors open far enough to allow easy entrance and exit, and the space between seats in the rear is adequate for the modern technique of sliding in sideways in a seated position. Entering the car from curb height is a little difficult; parking farther out from the sidewalk will help passengers by allowing them to enter or exit from street level. The short center post on modern hardtops all pose a minor problem that has nothing to do with engineering or quality control. This area, free from the familiar column that formerly ran into the roofline, is a handy place to rest the elbow or hand, either from the front seat or when entering the rear. Care must be taken not to close the other door on some unsuspecting person's hand or arm. People still close doors on their fingers and here is just another precaution we must remember.

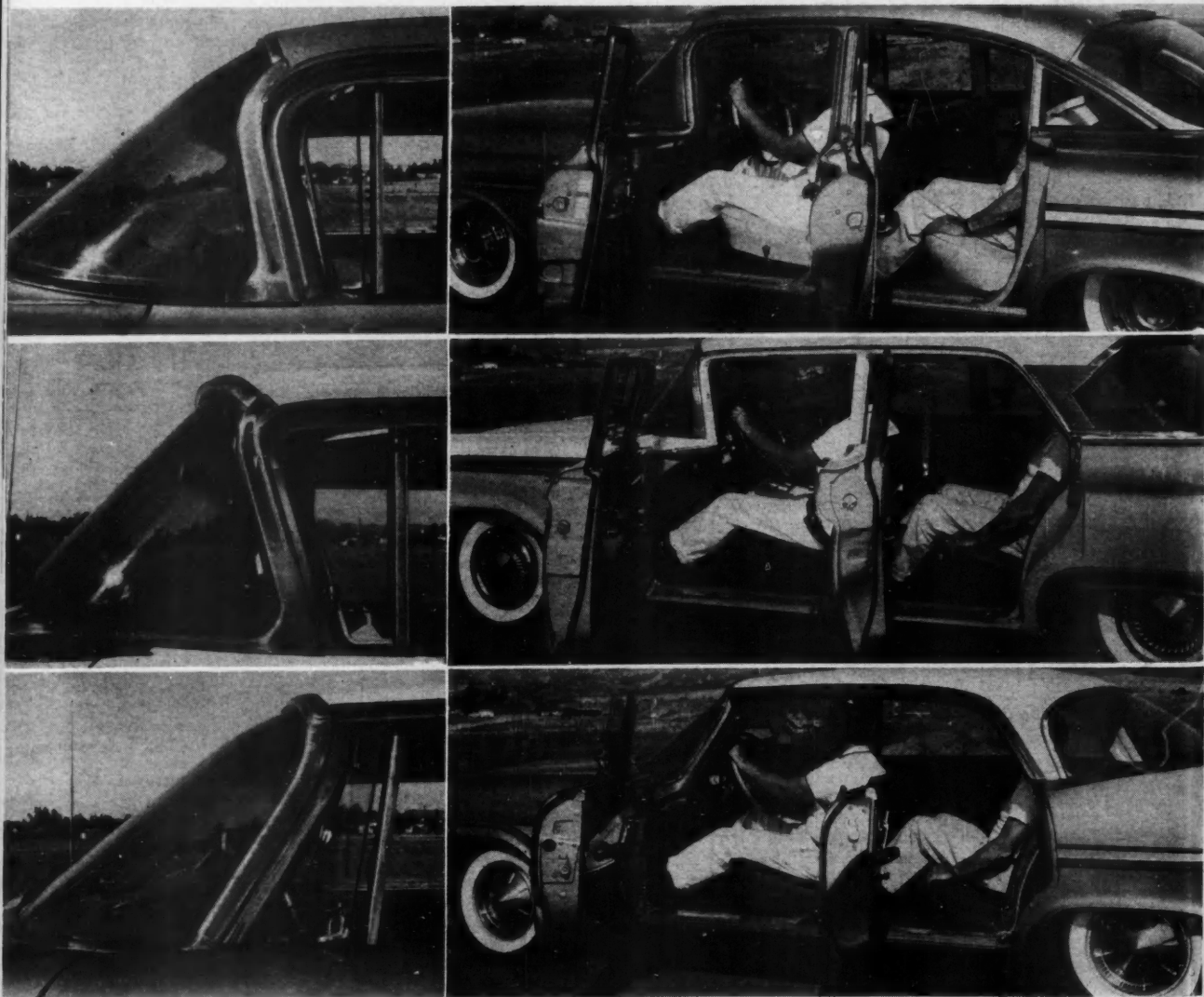
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BIG THREE *continued*

How is the driving position?

CHEVROLET Driving position is only fair due to such soft seat springing that a 180-pounder bottoms. This is not only uncomfortable but is accompanied by considerable squeaking from the seat itself. Persons of normal height can see over the wheel, and the pedals are placed for convenience. Quadrant-type gear selector is conventional but calibrations are the opposite of Ford, and there is no light in the indicator. Foot-operated parking brake is released by pulling lever under dash. Left fresh air vent is actuated by knob under left dash, but passenger must operate similar control on right side for air. Heater panel to right of steering column is not easily accessible to passenger but central radio location is within reach of anyone in the front seat. Glove compartment door makes handy tray when open, is a long reach for the driver, an added convenience for the passenger.

FORD The driver's best interests are at heart behind the wheel of this year's Ford. Visibility and relationship of wheel angle to its height is comfortable for even the slightly short driver. Deep curved windshields have progressed through the years to a point where they distort less and less, especially at the short radius ends. Occasionally one slips through that really waves the landscape, not only on Fords but on other cars, so watch for this on any new automobile. Quadrant-type transmission selector is mounted on the steering column, but for some reason or other is calibrated just the opposite of Chevrolet. (We wish they'd get together.) Carrying this opposition still further, a left-handed starter key position is used and this year Ford went to a foot operated parking brake which is released not by pulling up, but by pushing down on the lever. Heater controls to the right of the driver are accessible to the passenger, the radio is centrally located and glove compartment is at extreme right of dash. Seat adjustment is spring loaded to aid in sliding seat forward, and the long-legged driver might desire a little more rear adjustment than provided.



Chevrolet (top), Plymouth (bottom) have more windshield slant than Ford (center).

Driver, rear passenger, and door opening position of Chevrolet, Ford and Plymouth. Pillarless hardtop on Fury eliminates a need for window frames built into doors.

PLYMOUTH Plymouth has made the most of increased glass area by putting the driver and front passenger in what is almost cockpit seating. Average-size persons will sit erect behind a well-placed wheel that does not cut across the line of vision and has enough angle to provide relaxed arm position for steering. Left-handed operation of dash-mounted transmission pushbuttons is annoying, especially in parking, when attention must be diverted from the job at hand to select the right button. Buttons also control most of the functions of heater, ventilator and defroster, but the actual heat control is by a ball-tipped lever sliding vertically in a dash slot next to the button "console." Center-positioned manual or pushbutton radio is accessible to both driver and passenger but lighter, ashtray and glove compartment are a long reach for the driver, nice for the passenger.

Is the instrument panel well laid out?

CHEVROLET Centrally-located speedometer and flanking smaller dials are all visible through upper steering wheel but wide spacing of five dials makes reading at a glance difficult. The dial glasses are concave and pick up internal reflections from light clothing but they stand out well at night, and rheostat controls brilliance to suit the driver. Starting key can be removed while engine is running or in the "ON" position. Since the ignition and trunk use the same key, it is convenient to be able to open the trunk without shutting off the engine, but it is also possible to leave the ignition switch in a position where the car can be started without a key.

FORD Center cluster-type instrument panel is in good position for driver, with adequate contrast for daylight viewing and non-glare visibility at night. Intensity adjustment by rheostat allows complete blackout.

PLYMOUTH The instrument cluster fits well into the line of vision provided by the spokeless upper section of the steering wheel. Indirect lighting, with an intensity adjustment, gives good visibility at low light level without glare. Transmission and heater pushbuttons are also lighted indirectly and show up well against the darkened sections of dash.

How is vision?

CHEVROLET Forward and side vision are good but an undersize rear mirror does not come close to covering enough viewing area out the back window. With rear glass rivaling the windshield in depth and wrap-around, a mirror that covers the widest viewing angle should be supplied to make the most of this feature. Side distortion on the windshield is about average—considerably better on all cars since last year—but like a new pair of rimless glasses, it takes getting used to. Certain sunlight angles shine on the cowl which is reflected into lower portions of the windshield.

FORD There is excellent vision and minimum side windshield distortion although this varies in mass production, some being more wavy than others. Rear vision is very good due to increased glass area but the roof-hung mirror will block forward view of tall drivers. This mirror could be slightly larger to cover more rear viewing angle. Standard vacuum booster wipers cover most used windshield areas, and a two-speed electric drive is optionally available. Foot-pedal-operated washer sprays good stream that covers blade path. Certain sunlight angles pick up some cowl reflections in the windshield but these occur well below normal sight angle. Following headlights at night produce a double reflection in rear window that confuses rear vision through mirror.

PLYMOUTH One problem that drivers under 5 feet 8 inches will encounter is the rear view mirror. When seated high enough to have clear vision over the wheel, the driver finds that the large mirror, close to the wheel, blocks off a large hunk of right forward visibility. All but the head of an adult standing at

curb height is blocked off and a child stepping off the curb at a corner would not be seen at all. Taller drivers who are constantly blocked by roof-mounted mirrors seem to like Plymouth's cowl position, but unless the engineers build in more adjustment or move it forward or make it smaller (preferably all three), shorter drivers will have trouble unless they use a cushion or buy the three-way power seat option so they can jack themselves up high enough to clear it.

Sunlight angles at certain times of the day might warm the neck and shoulders of rear seat passengers through the large



Fury's large cowl-mounted mirror blocks driver's right view.

rear glass area that extends into the roofline almost to head height. Wipers are electrically driven and have only one speed, but do clean a large area of windshield in the right places. Foot-operated washer squirts straight up and depends on some forward motion to blow water back on windshield.

Does it start quickly?

CHEVROLET Sitting out all night in cool, damp weather did not hinder quick starting of the cold engine. Warm-up was quick as noted by the short time the engine remained on fast idle. The engine started well on hot starts after it was allowed to sit for a few minutes following hard driving.

FORD Cold starts were quick and warm-up was fast. Normal warm engine starts at the flick of the switch . . . but starting after a long hard drive required quite a bit of cranking to bring the engine to life.

PLYMOUTH The test car started easily on cold mornings and warmed up quickly as noted by the short time the engine remained on fast idle. Starting at ordinary temperatures was just as quick, but after fast driving at high engine temperatures more cranking was required. Engine heat conducted to manifolds and carburetor has been a big factor in hard starting on hot engines, especially if they are allowed to sit for a few minutes. Plymouth has inserted some aluminum foil and fiberglass insulation between the block and intake manifold at the rear of the engine to offset this heat transfer. This does make it a little easier to start when hot, but some extra cranking is still necessary.

How is it to drive in the city?

CHEVROLET "Quiet and smooth" describes the Chevrolet ride, and handling and visibility in traffic are excellent. Driveways and streetcar tracks can be negotiated with ease; bottoming on steep or abrupt driveway ramps occurs only under heavy rear loading. There are still some old-fashioned sidewalk canopies around the country where the supporting posts are near the curb. If the gutter has any camber at all, it will cause the car to tilt slightly, bashing those horizontal fins into the posts. So be careful when parking, either under these conditions or in a garage where workbenches or luggage shelves might catch the

*Comparative handling on a challenging course
reveals merits—as well as shortcomings . . .*



BIG THREE *continued*

rear side overhang. Rough streets that had enough chuckholes to produce noticeable sharp shocks brought out that annoying rattle that occurred when the doors were slammed. Parallel parking is just a matter of learning where those unseen overhangs are; but remember, when backing into such areas to watch high curbs—a lot of our streets and sidewalks were built for buggies or cars with 20-inch wheels and bodies to match.

FORD The ability to see much of the tops of the front fenders contributes to ease in navigating in tight spots or heavy traffic. Steering is not as easy as the Plymouth nor as quick, but it has a positive feel and does not transmit the effects of deeply-rutted car tracks or rough surfaces to the driver's hands. Parking in short spaces is simplified by the knowledge that there is little overhang beyond the top rear fender line visible to the driver. Power steering thumped loudly when wheels were turned to maximum lock either way—very objectionable. The bumper height front and rear is about standard with most cars and overriders reduce "hanging up" on those that might be a bit higher. Rear overhang ground clearance clears rather steep driveways but care should be taken negotiating these with rear seat passengers or heavily loaded luggage compartments.

PLYMOUTH City driving with such visibility is a real pleasure. The rear fins seem to be more functional than just a design feature, as they give a good indication of rear end position when parking. The car steers easily with the power unit and is responsive without a lot of wheel cranking due to the 3½-turn lock-to-lock ratio. There is enough upsweep to the rear overhang to clear most driveways, but the tail pipes will scrape if steep ramps are taken too fast with rear seat passengers. Street-car tracks in the Los Angeles area are rapidly disappearing but those still in existence were hardly noticeable to the test car. As the cars get longer the white painted zones marking parallel parking areas seem to get smaller. The optional rubber bumper guards will be regarded kindly by the car that gets a gentle

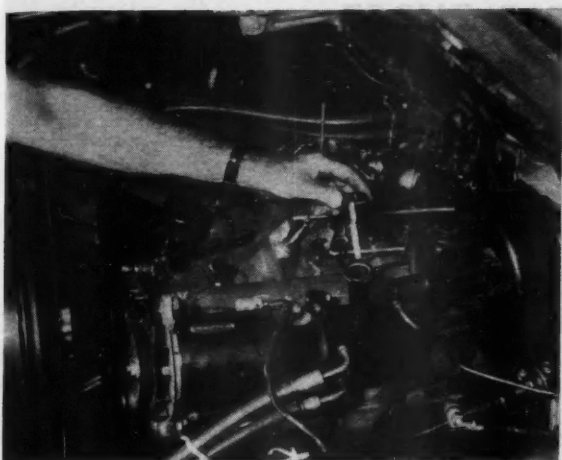
parking nudge. They will also save a lot of small nicks and dents in your own bumpers by absorbing the initial impact before metal-to-metal contact occurs.

How is it to drive in the open country?

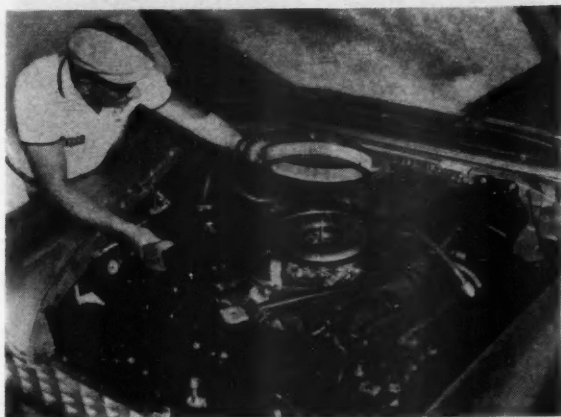
CHEVROLET Cruising speeds on the highway are not accompanied by engine or wind noise by which to determine how fast you are going. Engine and transmission noises are at a very low level and road rumble is well insulated from the passengers. Body line conformity with the windows has virtually eliminated the trapped air turbulence, and wind noises with windows closed are absent. Windwings or windows open at speeds over normal highway limits provided ample ventilation without disturbing conversation at normal voice level. Soft suspension smooths out corrugated dirt roads.

FORD Average highway driving is hampered by excessive wind noise at cruising speeds. Buffeting noise with windows closed, and howls with windwings or windows open make normal conversation difficult and at really high speeds shouting is the only method of communication. It is interesting to note here that at a true speed of 60 mph, the test car speedometer registered 65 mph; at 70 it read 74; and at 80 it indicated 84 mph. The car tracks well at speed on average highways and did not show a tendency to wander. Dirt roads and rough pavement around our Riverside Raceway "proving grounds" were taken with ease with Ford's rather soft suspension. Road noise has been pretty well insulated from the body, emphasizing the solid feel one has in this car.

PLYMOUTH Driving in the open country is a pleasure but be sure you have plenty of it as this car handles so well and responds to the throttle so quickly that cruising well over the posted or safe limits is a temptation. Wind and engine noise have been reduced to a point where they are no longer an



Single four-barrel or three two-barrel carburetors permit accessibility to Chevrolet's (top) oil reservoir or other normal engine servicing. Ford's front binged hood (center) and easily demounted air cleaner leave plenty of room for tuning or checking. Plymouth (bottom) has the same dry type paper air filter as other cars tested, and cleaner removal provides easy access to carburetor for servicing.



indication of high speed. Driving the dirt access roads around our Riverside Raceway "proving grounds" was very little different from paved roads as the car handled well in the ruts, and body noise was at a minimum on the corduroy dirt surfaces.

How is it to drive on curving roads?

CHEVROLET Wide, level curves at reasonable speeds are almost like straight roads to Chevrolet. There is some body lean but it does not get severe until the short radius curves of mountain highways sneak up on the driver . . . then there is considerable body side sway and an increase in under-steering as the front wheels seem reluctant to follow the direction in which they are pointed. Naturally, this is one of the extreme conditions that we expose our test cars to, and its main purpose is to find out what happens if an unmarked curve on a strange road catches us by surprise. Boiled down to comparisons under as near-similar conditions as possible, Plymouth was best in this emergency, Chevrolet second, and Ford third.

FORD Ordinary speeds on curves require a little more steering wheel action than Plymouth, and while there is quite a bit of body lean and a lot of tire squeal at recommended pressures, the Ford gets around the corners fairly well. If a sudden curve catches you at excessive speed, try to stop because under these conditions we found the front wheels just slid sideways, producing an under-steer condition that was too extreme. Ford was just unable to come even close to the maneuverability of Plymouth or Chevrolet under as near-exact conditions as it is possible to create.

PLYMOUTH For the switchbacks of mountain roads or the sweeping curves of some of our foothill highways the Plymouth poses no problems. There is some body lean but the car wants to follow the direction of the front wheels without washing out or sliding in the rear. The fast steering reduces wheel cranking and most curves can be taken without shifting hand position on the wheel. Under the extremes of fast cornering on reverse camber turns of Riverside Raceway (simulating conditions of entering blind curves at excessive speeds—which often happens to motorists on poorly marked or strange highways), this car followed the steering wheels without sliding or washing out in the front end.

How does it climb hills?

CHEVROLET Existing grades on our highways and secondary roads have not become steeper but engine horsepower has increased a great deal in the past several years, so Chevrolet's 280 hp is more than adequate for hills. Mountain roads and climbing switchbacks can be taken with ease and the Turboglide transmission offers some welcome engine braking on downhill grades despite improved brakes.

FORD The two-speed Fordomatic has a maximum shift-down speed of between 47 and 55 mph. The test car shifted down with a hard push on the accelerator at 54 mph and on continued acceleration in first gear allowed the engine to wind to 4100 rpm or 61 mph before shifting to high. In this 60-to-65-mph speed range there is not much flexibility if a long grade is encountered that is steep enough to just keep the transmission from shifting down or too steep to keep it from shifting up. This is where that extra gear, or lack of it, can really be noticed. On fairly level or rolling hill parts of the country, the lower priced two-speed is adequate, but for the long grades of mountains and foothills the three-speed Cruise-O-Matic is recommended, not only for the extra gear but for the second gear selector that allows full advantage of engine braking.

PLYMOUTH Transmission gear ratios have a lot to do with hill climbing performance, and the TorqueFlite automatic on the test car proved to have a good selection for most needs. Push-

button No. 1 keeps the car in 1st gear for slow pulling, ice, sand and snow. No. 2 is wonderful for downhill braking, mountain driving and traffic as it keeps second gear the highest gear unless near maximum rpm's are attained, then it shifts to high. "D" or drive, provides automatic shifting through all three gears but did not downshift for braking as fast as in No. 2 range.

Does it have good acceleration?

CHEVROLET The get-up-and-go is about the same as last year's car despite the fact that none of the cars in this year's comparison had limited-slip differentials. The extras added to the rear axle do a good job of maintaining traction, and it is hard to spin the wheels on take-off on a good road surface.

'59 with 280-hp engine

From Standing Start

0-45 mph 6.3 0-60 mph 9.0
Quarter-mile 16.3 and 83.1 mph

Passing Speeds

30-50 mph 3.8 45-60 mph 3.4
50-80 mph 8.1

'58 with 280-hp engine

0-45 mph 6.4 0-60 mph 9.1
Quarter-mile 16.5 and 83.5 mph

30-50 mph 3.6 45-60 mph 3.2
50-80 mph 8.0

FORD Considering the fact that first gear in a two-speed transmission has a "happy medium" ratio somewhere between a normal first and second gear, the 300-hp Fairlane with Fordomatic gets going at a fair rate. Zero to 60 times are only slightly longer than last year's car with the same engine but three-speed transmission; however, the passing speed times are better because of the "happy medium" gear ratio in the two-speed.

'59 with 300-hp engine

From Standing Start

0-45 mph 7.0, 0-60 mph 10.5
Quarter-mile 18.0 and 76.5 mph.

Passing Speeds

30-50 mph 3.7, 45-60 mph 3.2
50-80 mph 9.8

'58 with 300-hp engine

0-45 mph 6.5, 0-60 mph 10.2

30-50 mph 4.2, 45-60 mph 4.7
50-80 mph 11.3

PLYMOUTH Acceleration is smooth and good though slightly slower than the 1958 test car which had two four-barrel carburetors compared to the single four-barrel on the '59 test car. This cuts a couple of miles off the ¼-mile speeds, increases elapsed time slightly, but adds about 2½ miles per gallon to fuel consumption. One of the problems encountered on acceleration was a faulty adjustment of shifting servo mechanisms. The same thing happened on two test cars: at 4600 rpm (about 78 mph) the bands slipped before shifting from second to high. This point usually shifts crisply and the slow gear change at this point cut our acceleration speed and increased the elapsed time slightly. We could not improve our top ¼-mile speed or reduce elapsed time by manual shifting from a low gear start.

'59 with 305-hp engine

Standing Start

0-45 mph 5.5 mph, 0-60 mph 8.5
Quarter-mile 16.4 and 83.3 mph

Passing Speeds

30-50 mph 3.9, 45-60 mph 3.1
50-80 mph 8.8

'58 with 305-hp engine

0-45 mph 5.2, 0-60 mph 7.7
Quarter-mile 16.1 and 86.5 mph

30-50 mph 2.9, 45-60 mph 2.6
50-80 mph 7.2

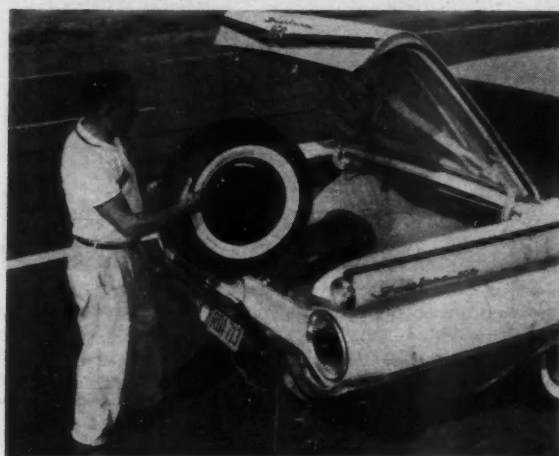
How does it stop?

CHEVROLET Grooved linings, increased heat dissipation area and air path slots in the wheels do a great deal to reduce brake fade. Nine panic stops from 60 mph still left a fair margin of stopping power although maximum pedal pressure was required for the 10th effort. Slight smoking and odor was evident but within a few minutes of driving the brakes recovered to almost cold stopping conditions. They are coming closer to providing more than one all-out stop from near-maximum speeds within reasonable intervals than the other cars tested.

BIG THREE continued



Center dip in Chevrolet rear deck (top) aids in spare tire or luggage handling as high outer ends require a rather long lift. Ford (center) has deck opening closest to the ground and Plymouth (bottom) is slightly higher. Vertical mounting of spare tire is almost identical in the cars tested and all luggage compartments are ample, well finished, and make the most of every inch of available space in width, length.



FORD Normal stopping chores are just within the range of these brakes. A succession of four rapid but not wheel-locking slowdowns from 60 to 20 mph produced a very hard pedal condition on the fifth attempt. Full pressure on the pedal the sixth time only slowed the car at a 16 feet per second per second rate, which figures out to a stopping distance of 240 feet from 60 mph. After several minutes of cooling from the smoking condition apparent after the fourth test stop, the brakes recovered sufficiently to relieve the hard pedal situation, some indication that more cooling and a little more area would provide a better margin of braking safety than now exists.

PLYMOUTH Under normal conditions the brakes are adequate. Pedal position is good and effort required offers enough resistance to give feel and reduce the tendency toward lurching stops at low speeds. Under more severe conditions where hard stops from 60 mph might occur within a short interval (not too difficult with today's acceleration), increased pedal pressure is required as the brakes begin to fade from heat. After four such 15 feet per second per second stops from 60 mph to 20 mph, the right front wheel locked and the brakes were smoking. The braking area seems adequate for a car of this size but solid hubcaps prevent cooling air from passing over the drums, and the brakes do not recover as rapidly as modern speeds demand.

Is it tiring to drive?

CHEVROLET Short seats and poor back support, plus soft padding that allows a 180-pound person to hit bottom are most certainly not comfortable. Only a good wheel position and over-the-hood view keep this car from being a real fatigue machine.

FORD It is a little less tiring than the Plymouth probably due to better back support, not by contour or firm padding but by a more erect sitting position. Seat itself is on the short side for thigh support on long hauls but pedal position is good and one does not have to hang onto steering wheel to keep from sliding below good forward vision level. If you like to listen to the radio on long trips, the volume necessary to overcome cruising speed wind noise will probably prove to be more fatiguing than the seat.

PLYMOUTH Yes. Short seats and poor back support increased by very soft padding induce fatigue in a short time. Thigh support is short and the spine seems to curve into a bow as it sinks farther and farther into the soft seatback. Better contours rather than just softness are needed for comfort.



Usable area in Ford's side overhang allows near-six-footers to recline full length on the flat floor of the luggage compartment.

What kind of mileage does it get?

CHEVROLET Three two-barrel carburetors contribute greatly to the high performance of this engine by excellent fuel distribution, but by the same token, horsepower costs money. The temptation to open those throttle valves is always there as is their thirst for fuel. Gas mileage can be stretched by featherfooting the throttle but a high-performance engine is a waste of money with this kind of driving.

'59 Impala

Stop-and-go driving
12.9 mpg for 180 miles
Highway average
14.8 mpg for 300 miles
Overall average
13.8 mpg for 480 miles
Fuel used: Mobilgas Special

'58 Bel Air Impala

12.7 mpg for 260 miles
14.6 mpg for 803 miles
13.6 mpg for 1063 miles

Steady 50-mph speeds with our test bottle brought averages of eight runs up to 15 mpg, which is what featherfooting the throttle can do for gas mileage. Today, steady speeds of 50 mph for any length of time are seldom practical or possible under average traffic conditions.

FORD Mileage is slightly better than last year but nothing exceptional other than the claim to run well on regular gas. This might be true with the 9.6 compression ratio of this engine if the quality of gasoline throughout the country were uniform. Most fuels in the Los Angeles area are of high quality but there are sections within 100 miles of us that are hard pressed to produce premium fuels that do not give trouble in some engines. We suggest, however, that if regular fuels in your area run well in these engines, by all means take advantage of the per-gallon savings offered by its use.

'59 Ford Fairlane 500

Stop-and-go driving
13.7 mpg for 112 miles
Highway average
14.0 mpg for 250 miles
Overall average
13.8 mpg for 362 miles
Fuel used: Mobilgas Special

'58 Ford Fairlane 500

10.3 mpg for 215 miles
13.4 mpg for 497 miles
12.5 mpg for 712 miles

Steady 50-mile-per-hour tests with $\frac{1}{10}$ -gallon fuel bottle brought the mileage up to 17.7, proving rather graphically that high-speed performance increases fuel consumption per mile.

PLYMOUTH Considering the performance, good mileage. At the sacrifice of some acceleration, the 2.93 axle ratio would improve fuel economy as would the smaller 318-cubic-inch engine available for this body style. For real economy there is the 230-cubic-inch L-head six but it is not available in the Sport Fury body. For more go there is a double four-barrel manifold and carburetor setup for the Golden Commando engine.

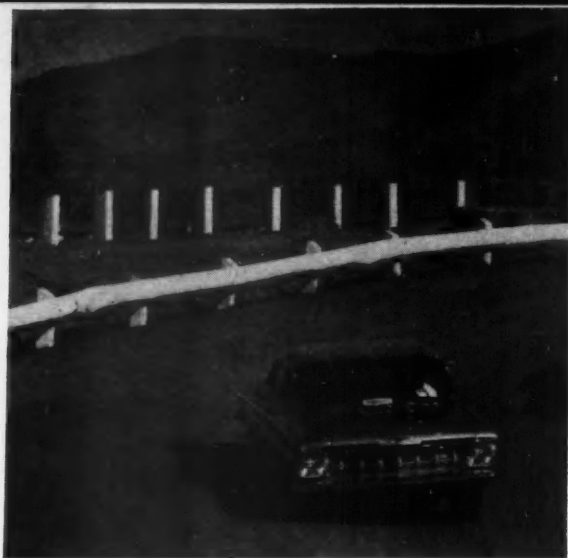
'59 Fury

Stop-and-go driving
12.6 mpg for 124 miles
Highway average
13.4 mpg for 327 miles
Overall average
13.0 mpg for 451 miles
One quart oil added after 350 miles.
Fuel used: Mobilgas Special

'58 Fury

8.4 mpg for 133 miles
10.6 mpg for 315 miles
10.0 mpg for 448 miles

Steady 50-mph fuel consumption tests showed an average of 12.5 mpg, but it improved at slightly higher speeds, due to cam changes and the single four-barrel carburetor. Idling is also smoother than in '58.



BIG THREE *continued*

How does it ride?

CHEVROLET Good, quiet, smooth ride under average conditions. Takes rough roads well and has average rear passenger leg- and headroom. While rear passengers have headroom straight up from the seat, leaning the head back too far will tip hats on the deeply curved backlight. Body lean is noticeable to rear passengers who might complain if car is cornered too hard.

FORD A feeling of solidity of construction with a soft ride is the first impression of the '59 Ford. Passenger comfort is good, and a little more space for leaning back before hitting the swept-in rear window is available to taller persons, though 10-gallon hats might acquire a rakish tilt. Road rumble and engine noise are well insulated from the passengers but wind noise is high. There is quite a bit of body lean on sharp curves but the car recovers well from dips without the sickening sensation of a fast falling elevator. Rear seat has more usable legroom than other two test cars.

PLYMOUTH It rides well. Rear seat passengers will not get seasick on wavy roads although they might find headroom a bit scant in the area of the rear window. Tall persons with hats must take care not to lean back too far. Road rumble and engine noise levels are quite low even at speeds of 80 mph, and normal conversation is possible.

How effective is the heating and ventilating system?

CHEVROLET The heating system works very well with quick heat available soon after a cold engine start. Placement of the heater controls so close to steering column makes adjustment easy for the driver but might annoy him if front-seat passenger wants to change settings. Fresh air vents have separate knobs for left and right air ducts, the passenger having his own control for the right side.

FORD Small dash panel control section to right of driver handles heater, blower and defroster. Air controls for left and right front compartment ventilation are on instrument panel. Heat is available shortly after cold engine starts and increases rapidly. Blower mounting location reduces noise level below that of Plymouth and about equal to Chevrolet. Fresh air over the feet and legs through the side vents is good, especially on those hot summer rides.

PLYMOUTH Pushbutton control is convenient for both driver and passenger. Ventilation is only fair for hot weather driving and the fan really roars on the high setting. Actual heat control is by lever. Warm air is available within minutes after starting.

How is it for normal servicing?

CHEVROLET Gas filler pipe concealed in center-mounted rear license plate. Battery, radiator, oil check, carburetor, hydraulic reservoir and plugs are out in the open and easy to service. Rear-mounted distributor is a long reach over fender and there is little room between it and firewall for big hands. Oil filter services from grease rack.

FORD The engine is an open book for normal carburetor, plug, coil, distributor, battery and hydraulic pump servicing, although the forward-hinged hood could facilitate access to front of engine if it went up higher. Gas fill pipe under hatch is in rear center just above bumper. Oil filter is removable when car is hoisted for lubrication.

PLYMOUTH Gas filler pipe is behind hatch on left rear fender. Oil filler, radiator, hydraulic reservoir, carburetor, battery, distributor, plugs, and air cleaner are all easy to reach from under hood. Oil filter must be removed from underneath while car is on grease rack.

How is it for major tune-ups?

CHEVROLET No special problems except the home tuner might have trouble reaching the distributor. Three carburetors and their linkage are not for the tinkering novice. Flat rate for major tune-up is about \$12 plus parts.

FORD Despite the convenience and straight-forward layout of the ignition and carburetor, major tune-up flat rate manual quotes \$25 to \$27 plus parts. This seems a little high as this engine compartment lends itself well to do-it-yourself adjusting.

PLYMOUTH No special problems—ignition system and carburetor are accessible without special tools or necessity of removing other components to reach them. Motor's flat rate manual for "Major tune-up and overhaul carburetor" quotes \$12 plus parts.

Does it have adequate luggage space?

CHEVROLET The more luggage space we have, the more we want or need, but for the Chevrolet it is as ample as they come. The vertically mounted spare tire can, as in other cars, be temporarily removed for those occasional extra-large packages. Jack and lug wrench stow near spare, and lid lifts easily against spring loading that holds it open. New rear-end treatment puts bottom of luggage compartment opening higher from the ground, and lifting spare the extra distance requires more effort.

FORD All of the Big Three are making the most of every bit of space for extra carrying. Well-finished rear compartments on Fords provide enough width for an average-size person to stretch out in if he has a mind to nap in such a place, and the depth will handle equal lengths. Temporary removal of the vertically mounted spare allows extra-large loads, but remember—these are softly sprung chassis and bottoming will be a problem with heavy cargo.

PLYMOUTH There is plenty of usable area painted and sealed against water and dust. Vertically-mounted spare is held by one wing nut and can be rolled out but requires a lift to stow. Jack and lug wrench, the only tools usually furnished with today's cars, are carried in luggage compartment. Spring loading aids raising large lid, holds it open in near-vertical position.

What are the car's best points?

CHEVROLET This is probably the smoothest, most quiet, softest-riding car in its price class. Handling and steering are not up to the high performance of its engine, but it is certainly a comfortable family touring car with ample passenger and luggage space. Personal opinions are varied concerning horizontal

fin treatment but if "all-new styling" is important to the buyer, then that is another point in the car's favor.

FORD The outstanding feature of the Ford is the solid feel of the body. Doors close like bank vaults and give a feeling of extreme rigidity and safety. For those who like a little feel to their power steering the Ford is the best choice, although the wheel requires more turns and a bit more effort than Plymouth.

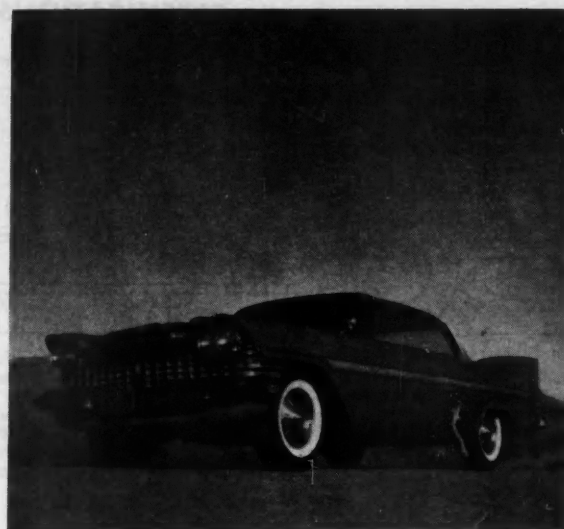
PLYMOUTH The outstanding points for Plymouth's Fury are its performance and handling. Here is a car that is fun to drive out in the flat, on curving roads, or through the mountains, yet it provides comfort and usable luggage space for family touring. Styling is a matter of opinion but this sporty design, not too much different from 1958 models, should hold up well for several years without becoming outdated by major facelifts by competitors.

Is it a good buy?

CHEVROLET The buyer has no way of telling at this time whether this body style will be another one-year model or not. For general finish, comfort, economy, and passenger and luggage space, it is a comfortable and fairly economical automobile. Wider choice of engine options than competitors offers better selection for individual wants or needs. Depreciation of most popular models over three-year average is about \$275 per year.

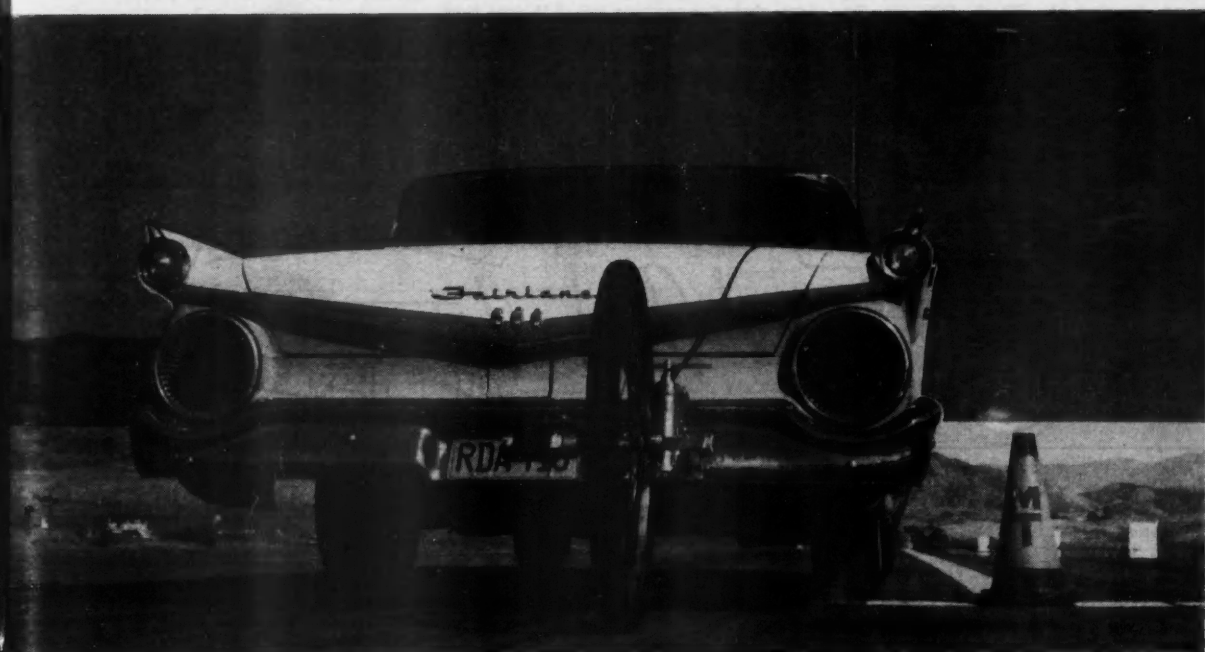
FORD If the car maintains the solid feel of the test vehicle, its rather conservative body style should hold up on the used car market, which is, after all, an indication of value based on depreciation. For solid comfort of ordinary transportation with reasonable fuel consumption and an average three-year depreciation of \$325 for most popular models, Ford should compete well in the Big Three for 1959.

PLYMOUTH We like it. Of the Big Three tested, this was the best performing and best handling. Performance is costly as it



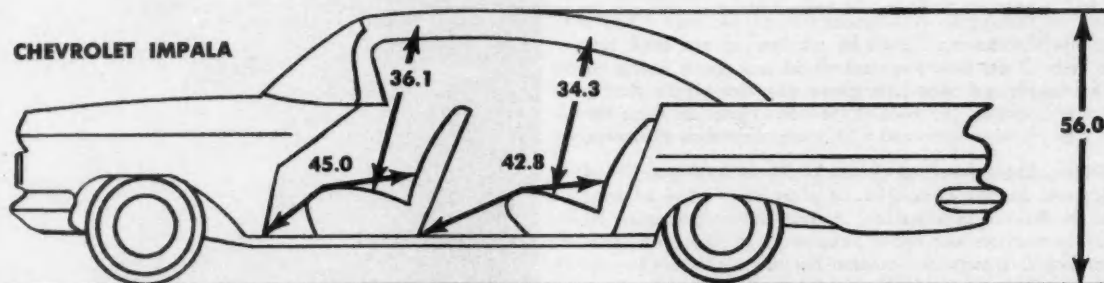
hits you right in the gas tank. Two more miles to the gallon for the 10,000-mile-a-year driver is a saving of about \$60. A very slight sacrifice in acceleration has been made to achieve better idling and improvement in fuel economy over last year's car, but the manufacturer holds no claims for fuel thrift for this combination. Plymouth's depreciation average for the past three years has been about \$340 per year for the most popular models.

(Turn page for specifications)



SPECIFICATIONS OF TEST CARS

CHEVROLET IMPALA



ENGINE: Ohv V8. Bore 4.13 in. Stroke 3.25 in. Stroke/bore ratio .79:1. Compression ratio 9.5:1. Displacement 348 cu. in. 3 2-bbl. carburetors. Dual exhaust. Advertised bhp 280 @ 4800 rpm. Bhp per cu. in. .80. Piston speed @ max. bhp 2690 ft. per min. Max. bmep 153.8 psi. Max. torque 355 lbs.-ft. @ 3200 rpm.

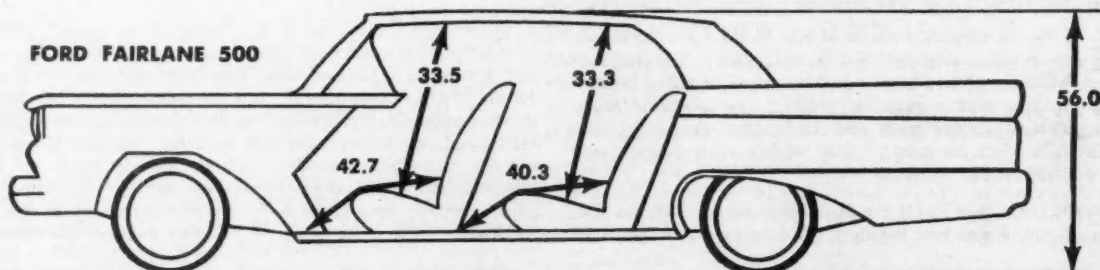
TRANSMISSION: Turboglide automatic 2-speed 5-element torque converter with planetary gears. Ratios 2.67:1, 1.63:1.

CHASSIS: Front suspension—Independent, long and short control arms with coil springs. Rear—Upper and lower control arms with coil springs. 7.50 x 14 tires. Power steering, recirculating ball, 5.2 turns lock-to-lock. Overall ratio 24:1, turning diameter 40.2 ft. Rear axle—conventional differential, ratio 3.08:1.

DIMENSIONS: Wheelbase 119 in., overall length 210.9, overall height 56, overall width 79.9, front tread 60.3, rear tread 59.3, rear overhang 59.3.

PRICE: Factory-suggested retail price of test car equipped as described, including federal tax but not state and local taxes, delivery and handling charges or freight \$3531.85.

FORD FAIRLANE 500



ENGINE: Ohv V8. Bore 4.0 in. Stroke 3.5 in. Stroke/bore ratio .88:1. Compression ratio 9.6:1. Displacement 352 cu. in. 1 4-bbl. carburetor. Dual exhaust. Advertised bhp 300 @ 4600 rpm. Bhp per cu. in. .85. Piston speed @ max. bhp 2683 ft. per min. Max. bmep 162.7 psi. Max. torque 380 lbs.-ft. @ 2800 rpm.

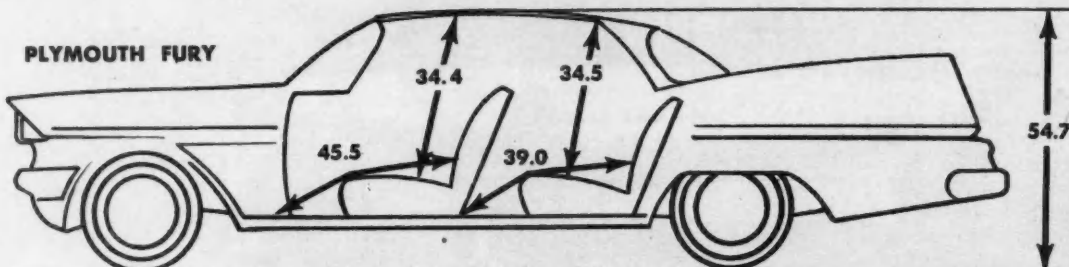
TRANSMISSION: Fordomatic, automatic 2-speed 3-element torque converter with planetary gears. Ratios 1.75:1, 1.00:1.

CHASSIS: Front suspension—Independent ball joint, long and short control arms with coil springs. Rear—Semi-elliptical springs. 8.00 x 14 tubeless tires. Power steering, recirculating ball, 4.75 turns lock-to-lock. Overall ratio 25.2:1, turning diameter 40.6 ft. Rear axle—conventional differential, ratio 2.91:1.

DIMENSIONS: Wheelbase 118 in., overall length 208, overall height 56, overall width 76.6, front tread 59, rear tread 56.4, rear overhang 55.8.

PRICE: Factory-suggested retail price of test car equipped as described, including federal tax but not state and local taxes, delivery and handling charges or freight \$3257.10.

PLYMOUTH FURY



ENGINE: Ohv V8. Bore 4.12 in. Stroke 3.38 in. Stroke/bore ratio .82:1. Compression ratio 10:1. Displacement 361 cu. in. 1 4-bbl. carburetor. Dual exhaust. Advertised bhp 305 @ 4600 rpm. Bhp per cu. in. .84. Piston speed @ max. bhp 2591 ft. per min. Max. bmep 165 psi. Max. torque 395 lbs.-ft. @ 3000 rpm.

TRANSMISSION: TorqueFlite, automatic 3-speed, 3-element torque converter with gears. Ratios 2.45:1, 1.45:1, 1.00:1.

CHASSIS: Front suspension—Independent, non-parallel control arms with torsion bars. Rear—Semi-elliptical springs. 8.00 x 14 tires. Power steering, rack and sector, 3.5 turns lock-to-lock. Overall ratio 19:1, turning diameter 42.2 ft. Rear axle—conventional differential, ratio 2.93:1.

DIMENSIONS: Wheelbase 118 in., overall length 210, overall height 54.1, overall width 80.3, front tread 60.9, rear tread 59.7, rear overhang 58.9.

PRICE: Factory-suggested retail price of test car equipped as described, including federal tax but not state and local taxes, delivery and handling charges or freight \$3779.30.

PERFORMANCE (0-60 mph time, in seconds)

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PLYMOUTH FURY

CHEVROLET IMPALA

FORD FAIRLANE 500

Motor Trend PERFORMANCE / ECONOMY Comparison Chart

6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

MILES PER GALLON (steady 50 mph)

PERFORMANCE AND ECONOMY might be called competitive rather than comparative for they vie with each other over the two most accurately measurable factors of the basic functions of the modern automobile: its ability to move from a dead stop to cruising speed (acceleration), and the quantity of fuel used in the process of maintaining a practical speed (miles per gallon).

Invariably, as the performance increases, the fuel consumption also increases. Engineers have worked for years and will continue to do so to achieve what they think is the best possible performance for the amount of fuel used. Working these two functions against each other in the form of a performance/economy graph, MOTOR TREND will be able to plot the relative position

of each of the 1959 cars as they are tested. The higher the point from the bottom line, the faster the acceleration. The greater the distance from the left vertical scale, the better the gasoline mileage. Therefore, the farther the point of intersection is to the right, and the higher up it is, the more your dollar buys in acceleration and fuel economy.

Each month, as we present our three-way road tests of cars as nearly as possible in the same price class, engine size and horsepower, and body style, we will add our findings to the chart. This will then give a ready reference of comparison of past and presently-tested cars. At the end of the year's testing program, all of our findings will be on the one chart.

300 mph on the Salt

"Some day soon I hope to bring the World's Land Speed Record back to America. But today all I ask of my fatigued machine and worn engines . . . is 300 miles per hour."

by Mickey Thompson

as told to George Hill

I PULLED ON MY HELMET, climbed into the tiny cockpit in the tail of my car and prepared for what I hoped would be the fastest ride ever taken by an American driver. Actually, I had already accomplished that feat the day before by hitting 286 miles per hour but the goal I had set for myself was 300—the magic 300-mile-per-hour mark that American hot rodders had been dreaming about for almost 10 years.

Sliding down into the cramped cockpit I stretched the seat belts across my lap and snapped the buckle tight. Two slim, sun-browned arms pulled the heavy shoulder straps across my chest and I looked up into the beautifully worried expression on the face of my wife, Judy. It took our combined strength to stretch the shoulder straps down to my lap and snap them into the seat belt. My body was then a part of the car, strapped to it so securely that only my arms and legs could move. Judy helped fit the goggles over my eyes and then with a quick, "Be careful, honey," she lowered the snug plexiglass canopy over my head and I heard the two snaps, one on either side of my head, lock in place.

A quick glance across the instrument panel showed that the car was ready. All instruments were in pairs: four gauges for each of the two engines. I looked past the tops of two tachometers, past nine feet of hand-formed aluminum hood that housed the two powerful Chrysler engines and my eyes followed the painted black line in the center of the white salt racing course to the point on the horizon where it disappeared. That black line was nine miles long but I would not be able to see the other end until after I had completed two miles of acceleration, three miles of electronically timed speed traps and even then not until I had shut off the engines and decelerated for another three miles.

Bob Higbee, official starter for the Bonneville National Speed Trials, walked over, looked inside to see that both seat and shoulder harnesses were fastened, and then walked back toward the push truck. A few seconds later I heard the push truck fire up and then there was a slight nudge on the push-bar as the truck made contact. I pushed in the clutch for the front engine and locked it in place. The front engine drove in high gear only and would not be used until the rear engine, with its two-speed transmission, had accelerated the car up to about 100 miles per hour. I pushed in the clutch for the rear engine and placed the gearshift in second position just as the truck began to push.

We rolled slowly for the first 30 yards and when the truck went into second gear we began to pick up speed. I heard the shift into high gear and a short time later the sound of the horn. That was my signal we had reached 70 miles per hour—time for me to go to work. I let in the clutch for the rear engine, opened the fuel valve, watched the oil and fuel pressure gauges climb to their proper

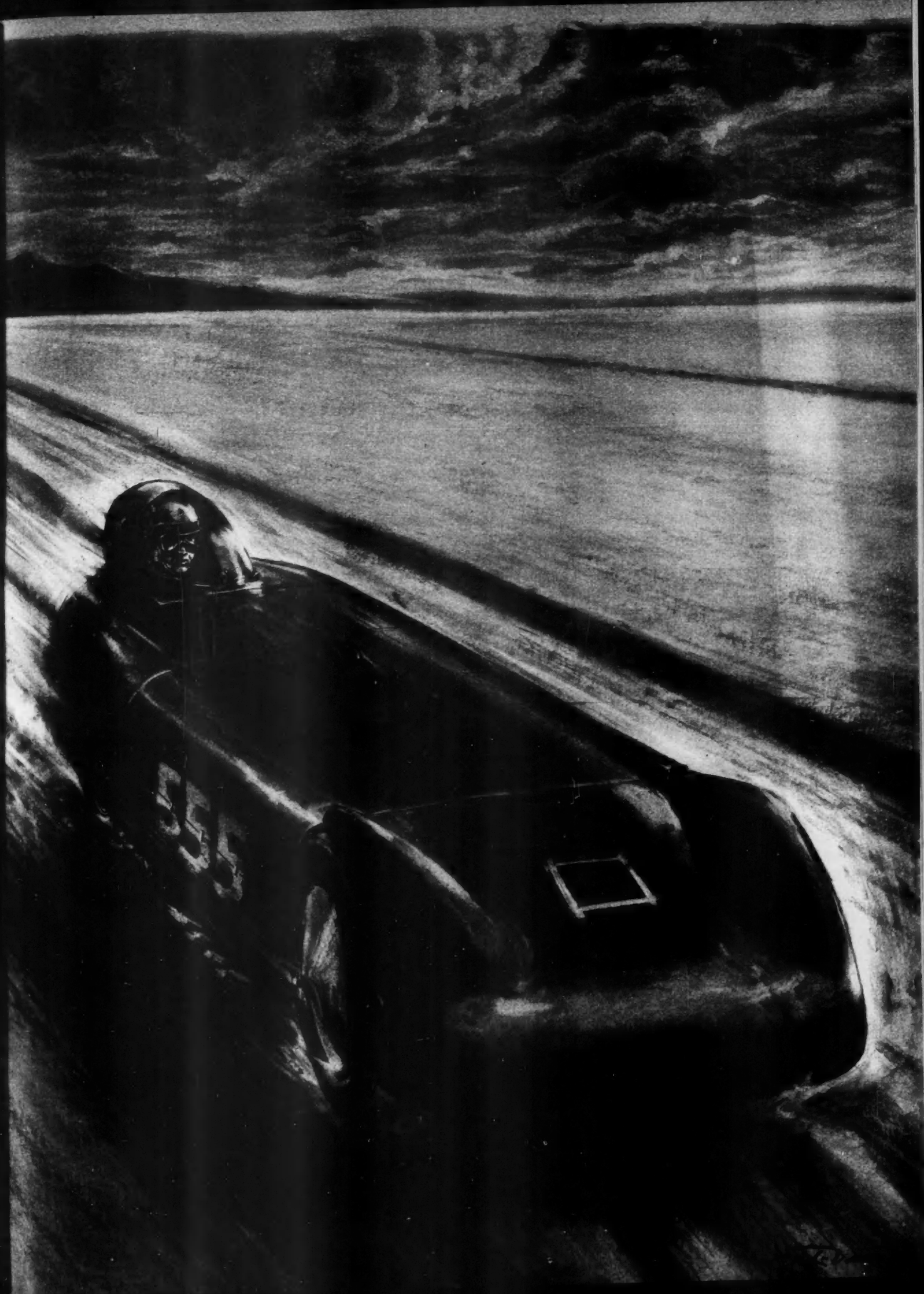
continued on page 71

"The noise inside the car became deafening as 800 horsepower from two engines roared inside the aluminum shell and the gears in both differentials began to scream their high-pitched cry."

Illustrated by Carlo Demand

epower
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d cry."

mand



CUSTOMODERNIZING IN MINIATURE

If you feel creative, want to customize your "dream on wheels," but can't afford it, this approach to custommodernizing may be just the thing for you

by Ron S. Miller and Bob Till

FRUSTRATED? Bugged by an absurd tail light, a ridiculous grille, an outrageous fin? Do you feel the strong creative flow of Detroit stylist's ink through your veins, but without the means for putting your inspirations to the test?

Or are you one of the elect, with time and funds for actually making your dreams realities, but — as is to be expected — in possession of a complex against jumping directly from the design board to the building of that \$15,000 faster-than-sound Garden of Babylon on wheels?

Whatever your case might be, there is now an exciting and inexpensive means for saving yourself a trip to the neighborhood analyst. There is a way for anyone with a little automotive imagination to easily build, from his own design, an inexpensive but fully satisfying prototype . . . a prototype in miniature!

Such companies as Revell, Monogram, Aurora, Merit, and A.M.T. have, in the past few years, made available an endless variety of plastic model car kits. These kits represent an excellent and inexpensive (they cost from 50c to \$2) means for building model prototypes. The versatility of plastic is so great that there is practically no limit to the amount of customizing that can be done to the cars in these kits, and the hobbyist-designer may permit his imagination to run wild!



Sporty "Thundermental" was customized from a black Continental Mark II kit, painted white to enliven new styling.

Most of the kits are made of styrene, but some are being manufactured in acetate. Both of these plastics can be cut, sawed, filed, shaved, whittled, and even heat-bent into new shape. In heat-bending, great care must be taken not to melt the plastic. (Use your kitchen oven only if you are designing a plastic blob!) A stove pilot-light, if it is covered and if caution is exercised, may be used. The part to be bent (or otherwise altered) should be placed on the pilot-light cover for a few seconds, then carefully worked into the desired shape.

There are two types of saws which work best on plastic: the *razor saw*, which is excellent for making straight cuts, and the *jeweler's saw* for curved cuts. With a little care and practice, you can master the technique of these two tools. For straightening, smoothing and squaring the edges of parts to be fitted together, you should have a small assortment of *jeweler's files*. These files will also be useful in removing undesired ornamentation from the surface of various parts (such as the handle from a trunk lid). Since plastic has a tendency to clog the files, it is important to wipe or tap them clean often.

An *X-Acto knife* can be used for cutting, shaving, and whittling. In shaving or whittling a part which will be exposed, take care not to let the knife slip on the smooth surface. These plastics are quite soft and an unwanted scratch can be made all too easily. Thin pieces may be cut entirely through with the knife, but when working with thicker pieces it may be advisable to cut only about half-way through the thickness and then carefully snap the piece apart. Whether you use a knife or saw, make an allowance of a fraction of an inch for filing the edges of cut pieces smooth.

All of these tools may be purchased cheaply at any hobby store. It is also wise to have *tweezers* for handling small parts and locating parts into awkward places.

The cement you use will depend upon the kit you choose to work on. For styrene plastic there is a special styrene cement. Similarly, for acetate you must use a special acetate cement or acetone. These cements actually melt the plastic area to which they are applied so that the parts are literally welded together. Take care to apply cement to only those surfaces to be joined and not to apply too much of it; if the cement runs it will damage any surface it touches. Each kit manufacturer recommends his own cement, but there are numerous brands. Some are fast drying, some slow. You



A plastic model car kit and a few inexpensive tools can turn any tabletop into an automotive customizing paradise.

should have a supply of each, since there are situations in which one may be more convenient than the other. After a little experimenting, cementing will be no problem.

Some manufacturers "metalize" certain pieces in their kits for increased realism. The metalizing process gives plastic a simulated chrome finish. Since the process is expensive, it is always limited to such parts as the bumpers, grille, and hubcaps. These parts, unfortunately, present the builder with a problem, for rarely do such metalized parts cement into place with any permanence. When working with them, it is best to scrape the metalized finish off the surface of the area where cement is to be applied. As with all exposed areas of plastic, cement is an enemy to the metalized finish. So sensitive is this finish, that even over-handling these parts with the fingers can cause damage. Wash and dry your hands before working with them, and even then handle them as little as possible. There are so few of these parts in any kit and their effectiveness on the finished model is so excellent, that it is well worth any extra time and patience you can afford when working with them.

The more you work with these kits, the easier they will

become to build. In the same way, the more models you customize the more proficient you will become in approaching a new kit and a new original design. The approach to be described in a moment has proven to be a highly successful and practical one. But it is by no means the *only* approach. The truly exciting part of this hobby is its limitlessness, its endless possibilities for original and imaginative experimentation. But, for all practical purposes, it is probably best to follow this procedure in approaching your first customizing job:

1. *Select the kit.* Determine which kit contains designs which most closely correlate with your own ideas. If you can, it is sometimes helpful to make a few rough sketches of your own ideas and then compare them to the available models. Although the parts in these kits may be altered radically, selecting a resembling kit will save you a great deal of work.

But even if you have no clear idea of what you wish to do, if all you want is to "make some changes," the selection of a kit is still important. The construction of the "Thundermental" was approached in this way, but only after some

CUSTOMODERNIZING IN MINIATURE continued

serious consideration. Close examination revealed that the *body sides* could be shortened considerably without disturbing the speedline; that, although a large piece was removed from the center of these parts, the remaining pieces fitted perfectly together. And since any change in one part must be followed with changes in other parts, it was determined whether those related changes were practical. For, though almost any change is possible, certain radical changes are simply not worth the trouble in terms of the final model.

2. *Read the instruction sheet.* The manufacturer's instruction sheet should become your bible. These kits are always designed in terms of assembly procedure, and most of the parts and their fits were determined by that procedure. Familiarize yourself with it thoroughly. Make a dry run through the instructions, fitting pieces together, getting an idea of the "assembly logic." This will help you considerably in plotting the changes you will have to make in customizing the model, and it may even provide you with some new ideas!

3. *Plan cuts and changes.* Your dry run through the instruction sheet should help you considerably here. Since an alteration of any part will consequently demand a change in all related parts, you must be aware of how all the parts relate to each other. A good rule of the thumb is: "A change *here* will mean a change *there*." A one-track mind has no place in model customizing!

The "Thundermental" was a customizing of the Continental Mark II (Revell No. H-1209). The natural lines of the Continental appealed to the designer and it was decided to customize this model into more of a sportscar type. It was seen that this change could be most readily made by shortening the body. But shortening the body meant shortening the frame, so all parts which affected the overall length of the car had to be altered. In the case of this particular model this consisted of changes to the *right and left body panels, chassis, floorboard, and the right and left door panels* (see illustrations). Further, the shortening of the body necessitated the rear seat being omitted. So a cardboard tonneau had to be made to cover the resulting gap.

Your customizing may be simpler or more complex than this, but in every case you must remember to plan all changes in terms of all the parts related to those changes.

Since these kits are manufactured in various scales, it is sometimes valuable

to know the scale of the kit you are working on. This will permit you to calculate the size of the changes you are making in the model in terms of the actual car. A change of an inch in a model may be a change of 32 inches in the real car. The following breakdown of the three basic scales may be helpful:

$\frac{1}{32}$ Scale = .031 to 1 inch

$\frac{1}{25}$ Scale = .040 to 1 inch

$\frac{1}{24}$ Scale = .041 to 1 inch

4. *Execute cuts and changes.* Make whatever cuts you have determined necessary. If, as in the shortening of the *body panels* on the "Thundermental," you must cement a cut piece back together, do so at this time so it has plenty of time to dry while you are working on the other changes. Saw, shave, whittle, or heat-bend all parts as their alteration demands. Since this step is crucial in the final success or failure of your model, approach it thoughtfully.

When all cuts have been made, file any "raw" edges smooth and square. This is especially important if that edge is to cement to another edge. When the *body panels* were cut on the "Thundermental," a fraction of an inch was allowed on both sides for filing. Make an allowance for this filing area whenever possible.

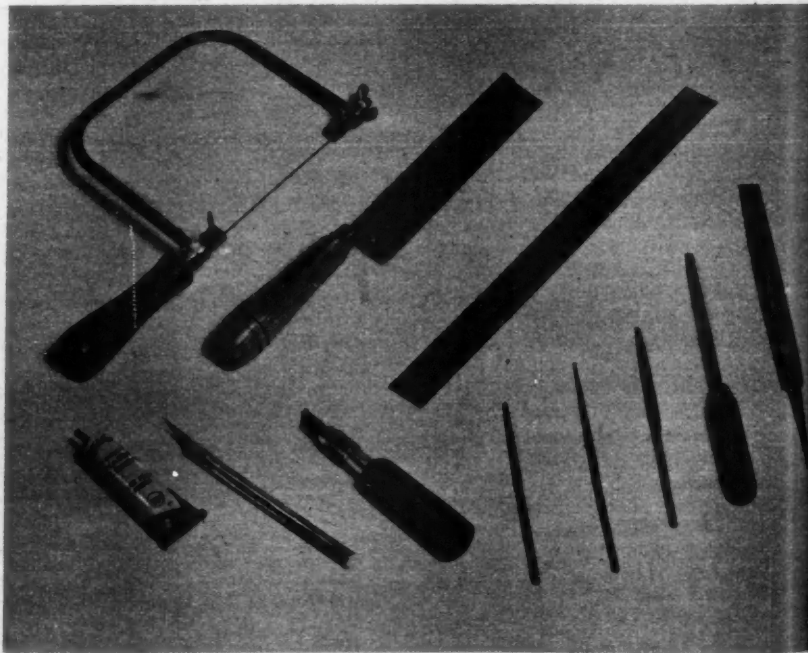
If you wish to remove any ornamentation from surfaces which will be exposed

(handles, speedlines, etc.), file them down carefully, avoiding making any scratches elsewhere. A very fine file will permit you to regain a smooth finish.

Since there are often as many as 60 parts to a kit, it may be advisable to lay out the unchanged parts separately from the changed. In this way you can keep track of things.

5. *Make dry assembly run with changed parts.* Since it is all too easy to forget or neglect to make every change necessary, it is valuable, at this point, to go through the instruction sheet again and dry fit the model together. This will save you pain and profanity later.

6. *Assemble!* If your second dry run is successful, then go to it. By this time, if you are a true enthusiast, your anticipations will be just about out of hand. But since the point of assembling is the point of no return in miniature customizing, take control of your emotions and work carefully. Use a minimum of cement, just enough so that none of it will run over an exposed surface. Certain areas of assembly are particularly delicate, so allow the cement plenty of time to set before continuing. An extra two or three minutes given for the cement to dry will assure you that your model will not fall apart in the midst of proudly displaying it.



If you get some cement on your hands, wipe them dry before continuing. Use your tweezers for small parts and when working in difficult areas. Be certain the tweezers are free of cement before handling a new part with them. A little care gives big results. And remember: Follow the instruction sheet. It is your best guide.

AS YOUR SKILL in miniature car designing increases, you will want to go beyond the limitations of the single kit, combining parts from two or more kits. This is called "marrying" kits and presents a means for endless innovation.

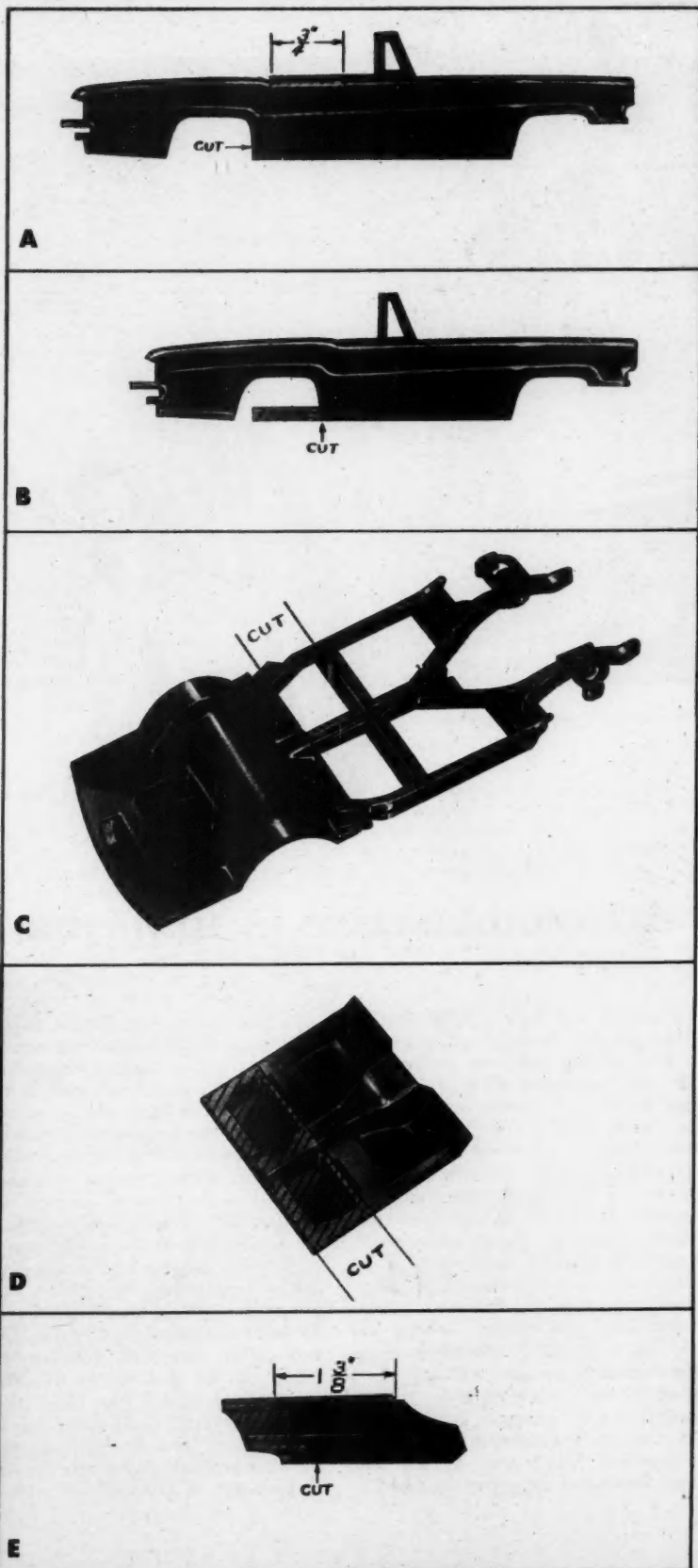
The procedure here is essentially the same as in the customizing of a single kit. One of the two or more kits involved will probably dominate — that is, have the greatest number of basic parts for the new prototype. The instructions of the dominant kit should then be followed, making assembly changes only when absolutely necessary. If no one of the kits dominates, you must rely on your own logic and ingenuity. But don't let this frighten you. You may be amazed at your own resourcefulness.

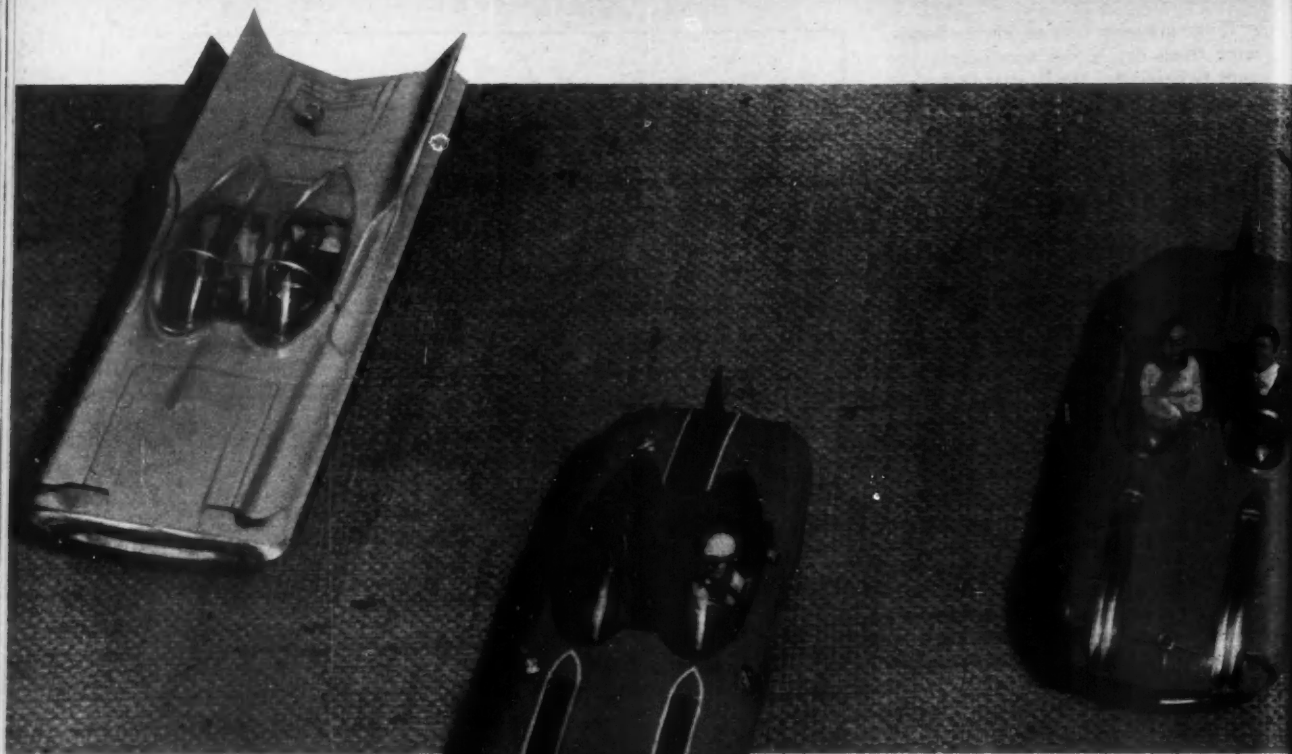
The "Le Mans de Mer" is a simple marriage of two kits, the Pontiac "Club de Mer" (Revell No. H-1213) and the Lincoln "Futura" (Revell No. H-1210). The only parts change involved is the switching of *canopies*. The remainder of this model was made from the "de Mer" kit with the addition of some materials found commonly in any home or workshop. (The imaginative use of materials beyond the plastic parts in these kits

Illustrations by Bob Hill

Thunderbolt body and chassis assembly: A) Section (shaded area) was cut from body sides of Continental Mark II kit. Horizontal cut was made between rear fenders and rocker panel. B) Pieces were then cemented together, the separation cut serving as new breakline for door. Rocker panel was cut in line with wheel opening. C) Shortening the body necessitated changes in all related parts. A piece was cut from center of chassis, and the end pieces cemented together. D) Floorboard was shortened by cutting off rear area — least important to the final construction. E) Rear ends of the door panels were also cut off, new rear edge altered to fit into rear wheel wells in the final assembly. These alterations compensated for the shorter body sides.

Customized parts (at left): 1) 1/2" x 1/2" x 1/2" brass, 2) 1/2" x 1/2" x 1/2" brass, and an assortment of 1/2" x 1/2" x 1/2" brass. Pair of tweezers also on left by hand.





Photos by Bob D'Olive and Al Palacy

Canopy from Futura (left) was married to Club de Mer (right) to create "Le Mans de Mer" (center). Decals, painting add greatly to Le Mans styling.

CUSTOMODERNIZING IN MINIATURE continued

will permit you to accomplish further "impossibilities" in model car designing.)

After making a dry run through the "de Mer" instruction sheet, it was seen that the "Futura" canopy would have to be altered to fit. To do this efficiently, the instruction sheet was momentarily ignored and the front and rear top halves of the "de Mer" body were cemented together. Before the cement dried completely, these parts were located (not cemented) onto the bottom half of the body. This assured a correct fit. These parts were held together with rubber bands while the "Futura" canopy was experimentally fitted. After determining the amount of trimming necessary for a good fit, the trims were made. But the canopy was not cemented into place until it was so designated in the assembly instructions (which was, by the way, near the end of the entire assembly).

To further customize the car, only the driver's side of the interior was installed. A tonneau was cut from cardboard and fitted over the passenger's side. In constructing the "de Mer" with an enclosed canopy, the size of the driver-figure presented a problem. To solve this problem, the figure's left arm was cut at the shoulder and re-positioned at his side, thus locating the arm completely within the car. But even this change was not enough. The seat too had to be lowered. To accomplish this, the location flange was cut from the bottom of the seat and the seat cut in two at the joint line. These two pieces were then installed separately, and the clearance for the driver-figure was achieved. (See illustrations.)

It is important to note at this time that the "de Mer" and the "Futura" are in the same scale. Occasionally, marriages of parts can be accomplished with kits

of two separate scales, but in most cases it is best to marry parts from kits of the same scale. Otherwise you might find yourself with a peculiar monstrosity.

There is another unusual problem that sometimes arises in marrying kits (although it was not encountered with the "de Mer") and that is in the need for "filling" the cracks and gaps caused by imperfect fits. If these open areas are large, it is best to cut a piece of plastic to shape and fit it in. If, as in most instances, it is just a small area, it can be filled with Rinshed-Mason's "Green Stuff No. 74 Putty," sold at most auto supply stores, or with "Duratite Surfacing Putty," easily obtainable at any paint store. These handle like putty; and, like cement, they literally fuse onto the plastic. In using either of these fillers, work carefully; allow ample time for drying.

On certain sad occasions you will find

part numbers stamped on areas you (quite contrary to the manufacturer's intention) have chosen to expose. In order to give the "de Mer's" wheels a "guttery" appearance, it was decided to omit the metalized hubcaps from the finished model, thus leaving the stamped numbers exposed on the wheels. These were promptly filed off. It was noticed that there were what was assumed to be two exhaust vents at the rear of the model. These two openings were used to advantage by angle-cutting two small pieces of 3/32 O.D. tubing and then inserting them. And, lol! twin tail pipes!

But the final touch was yet to come.

The "Le Mans de Mer," like the "Thundermental" and all other customized miniatures, needs to be glamorized. The painting of the model — as much a part of its design as any of the alterations — can make or break your finished product. It is, in the truest sense, the "final touch."

The "Thundermental" was decorated with an eye for capturing the sporty feeling of the design. Light colors tend to give more life to a miniature, to seem-

ingly increase its size and accent the details. So the "Thundermental" was painted white. When working in two-tone, it is best (for the same reasons) to have the dominant color light and the secondary color in strong contrast.

The "Le Mans de Mer" was decorated with an eye towards the "Le Mans" style. It is, in fact, the painting of this model which gives it that style. In the case of the "Le Mans de Mer," all the metalized parts were painted a dark blue, as was the undercut section of the lower body.

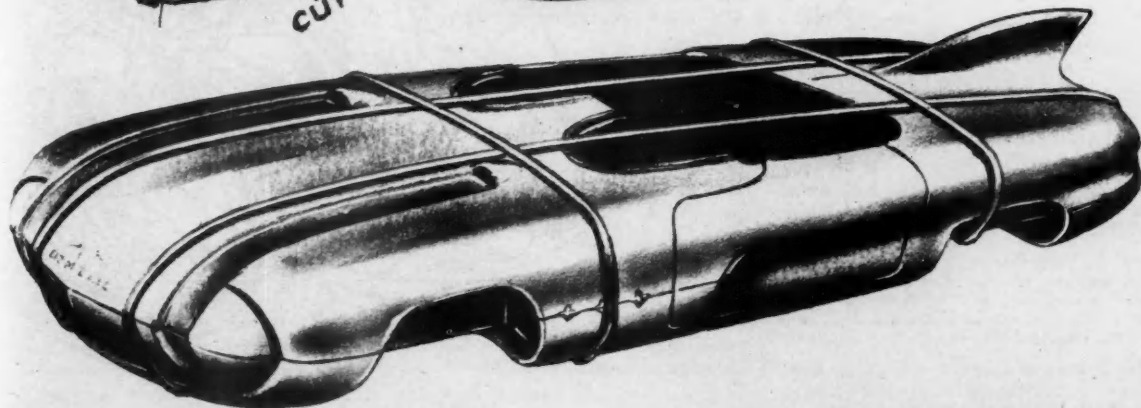
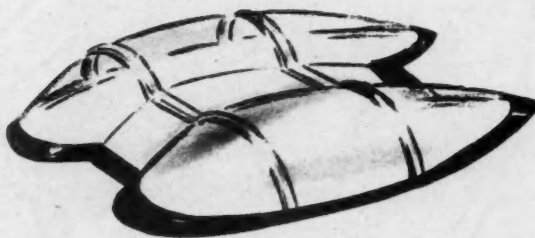
These models require a special synthetic enamel paint, easily obtained at any hobby store. These paints work equally well on styrene and acetate. The ideal way to apply the paint is with a hobby air brush, but, like all ideal ways, it is also the most expensive. The serious hobbyist could make no better investment. But, lacking such convenience, careful work with a brush can also produce handsome results. It is best to apply several coats, brushing each coat on thin and even, and allowing it to dry thoroughly before applying the next.

Two-tone and similar effects, whether you brush or spray, are best executed with the help of masking tape. Press the edge of the tape down firmly so that none of the paint will "bleed" under it. Be more sparing with the paint around the taped area so that it does not "build up," resulting in a ragged edge. Because the dried paint is like a film and can be accidentally peeled off, remove the masking tape after the paint has set, but *before it is completely dry*. With a little experience and a little patience you can master this, perhaps the most difficult operation in miniature customizing.

Now you are ready to share your accomplishment with the world, with friends or family or, perhaps, members of a club devoted to miniature customizing. No one need any longer say, "That's not the way I'd have done it." For a few dollars and a few hours of fascinating fun, you can do it the best way: Your way! You can be emperor of an automotive kingdom! You can be everyone: President of the Board, Chief Designer, Foreman, and Assembler of your own table-top Detroit. /MT



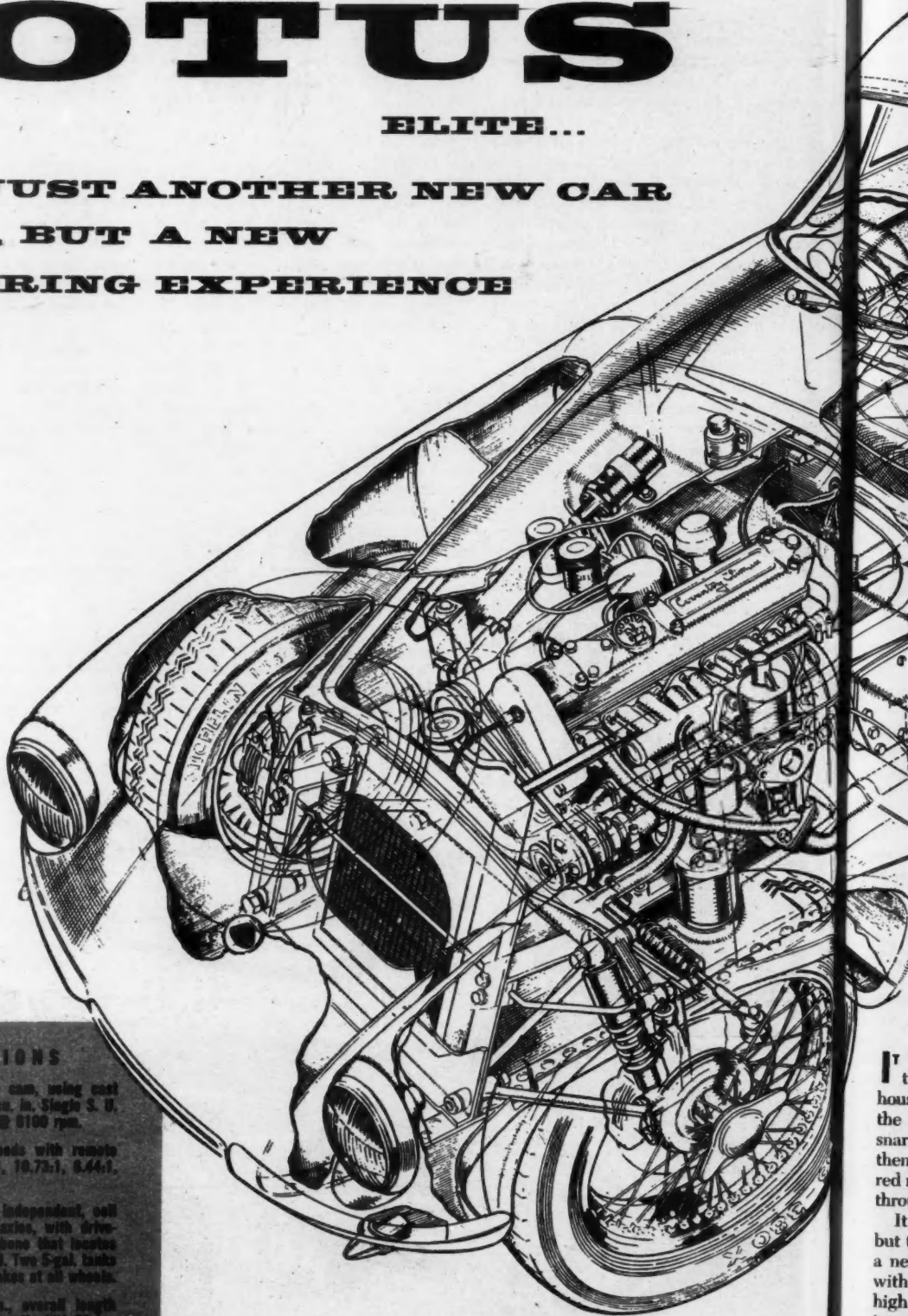
Top body halves of a Club de Mer were cemented together and held to bottom body half with rubber bands. Bottom edge of Futura canopy was then trimmed (dark area) to fit. To lower the seat, bottom location flange (shaded area) was cut away, the seat and cushion sawed apart, and the two pieces were installed separately. Driver's arm, originally resting on door top, was cut, relocated to fit in the car.



FIRST TEST RUN OF THE **LOTUS**

ELITE...

**...NOT JUST ANOTHER NEW CAR
TEST, BUT A NEW
MOTORING EXPERIENCE**



SPECIFICATIONS

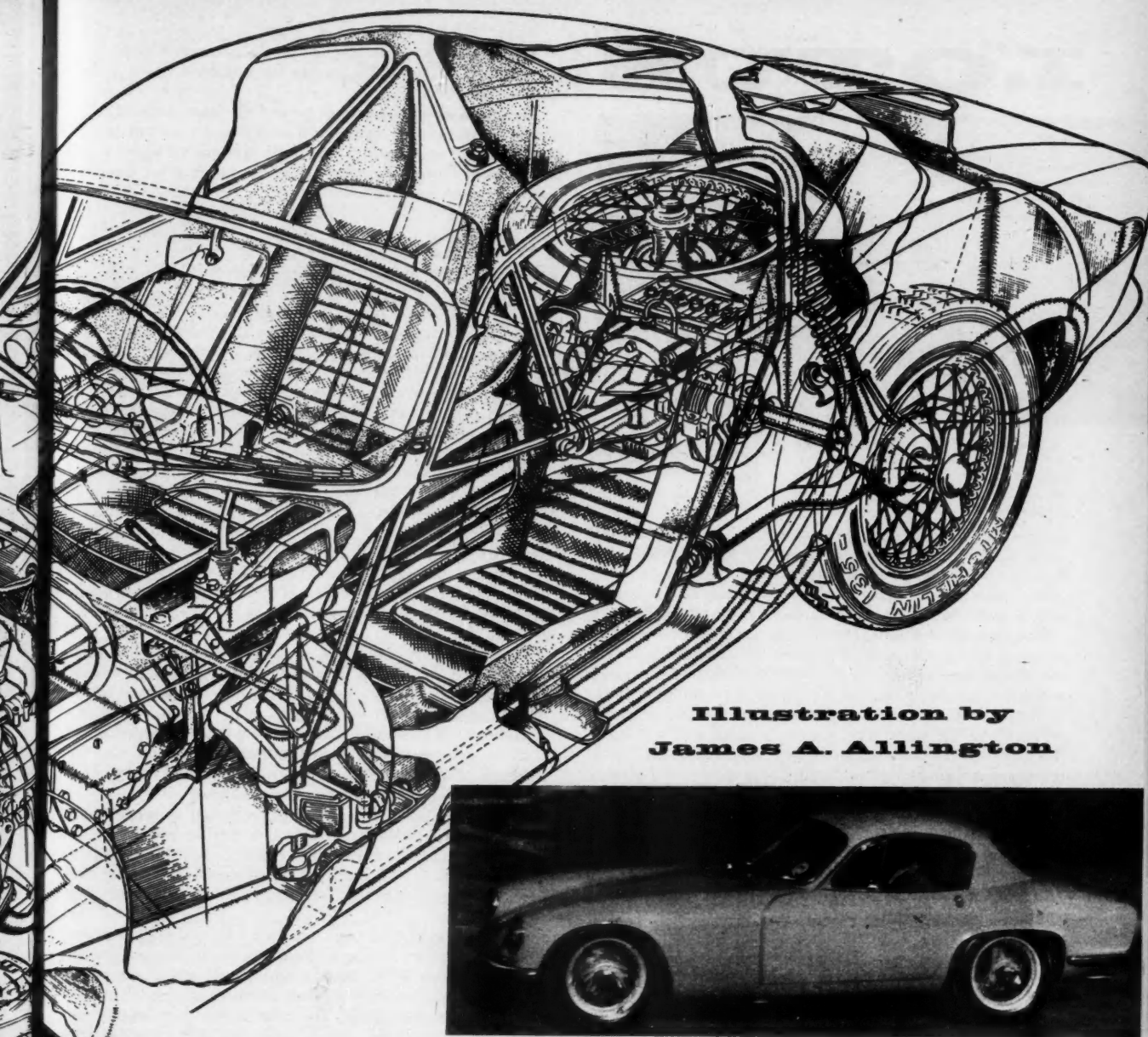
ENGINE: 4-cyl. with single ohv cam, using cast iron block. Displacement 74.4 cu. in. Single S. U. carburetor. Advertised hp 75 @ 5100 rpm.

TRANSMISSION: 4 forward speeds with remote control. Overall ratios: 17.89:1, 10.73:1, 6.44:1, 4.875:1.

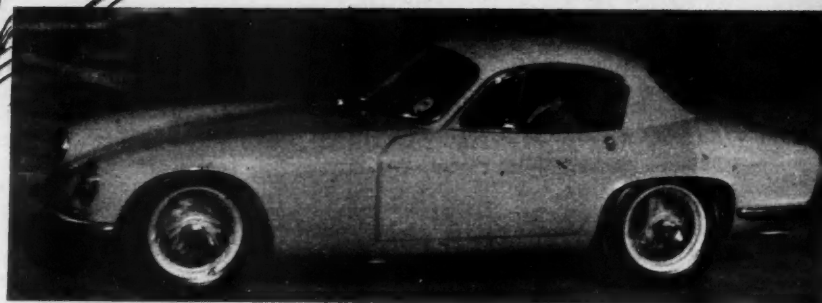
CHASSIS: Front suspension — independent, coil and wishbone. Rear — Swing axle, with driveshaft forming one arm of wishbone that locates wheel. Tubular shocks all around. Two 5-gal. tanks in front fenders. Girling disc brakes at all wheels.

DIMENSIONS: Wheelbase 84 in., overall length 144 in., overall height 46 in., overall width 50 in., front and rear track 47 in. Weight 1205 lbs.

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**Illustration by
James A. Allington**



by Gordon Wilkins

IT WAS A WARM SUNNY MORNING in fall. The leaves were turning to gold on the trees and the smoke from the farmhouse chimneys rose straight up in the still air. The quiet of the English countryside was suddenly assaulted by a crisp snarl rising and falling, sometimes cutting out for a moment, then rising almost to a scream. Soon there was a glimpse of red moving very fast and a tiny, brilliantly colored car hurtled through the twists and turns of the winding country roads.

It was my first test run on a production-type Lotus Elite, but to me it was more than just another new car test — it was a new motoring experience. This revolutionary little coupe, with its all-plastic structure, all-independent suspension and high power-to-weight ratio brings racing car roadholding into the Gran Turismo class. It holds 100 mph with insolent ease and has the inbuilt safety margins which only competition-bred cars can provide.

Since the first hastily finished prototype was displayed at the London Motor Show in October, 1957, a whole year's development work has been done on the race tracks (where it won nine records and set up five new lap records for its class), on the road and at the M.I.R.A. proving ground. The structure has been refined and simplified and production models are now coming through at the rate of two a week, which should rise to 10 a week in 1959.

The Elite looks tiny as you stand beside its 46-inch-high roof, on which you can rest your elbows. Getting in over the deep body sill requires a bit of agility. Once in, there is stretching room for six footers with leg-, head- and elbow-room to match.

With me on this test run was a six-foot-four colleague who settled down quite happily. Pedals are perfectly arranged, with a long spoon-shaped accelerator positioned for heel-

LOTUS



Seats show vast racing experience, have firm cushions with softly rolled edges. Small wheel is well away from chest.

continued

and-toework when making swift downward shifts. To the left of the clutch are two buttons: one to dip the headlights and the other to work the windshield washer. I noted carefully which was which, so that I would not suddenly be confronted with a wet windshield when facing dazzling headlights.

The seats show the benefit of vast racing experience. The center of the cushion and backrest are firm. Around the edges are softer rolls which locate the body laterally on fast corners without appearing to insist. The backrest rises almost neck-high and invites the passenger to relax. The wheel, with wooden rim and light alloy spokes, is small and well away from the driver's chest, encouraging the straight-arm type of driving position, permitting even sharp corners to be taken in one clean sweep. Steering is quick enough to cope with any situation, for it needs only $2\frac{1}{2}$ turns lock-to-lock. Once the Elite really gets going you are rarely conscious of moving the wheel at all, for this is a car you steer with the wrists — and with the throttle.

The artistic asymmetrical instrument panel has a 140-mph speedometer, tachometer with red warning sector from 6500 to 8000 rpm, and a group of fuel gauge, ammeter, water thermometer, and oil pressure gauge. Lined up to one side are knobs for choke, heater fan, wiper, light switch, ignition-starter switch and time switch for direction indicators. On the other side, where the fingertips can reach it without the hand leaving the wheel, is a trigger for horns or headlights.



Tiny Elite, only 46 inches high, is somewhat difficult to enter. Once inside though, there is legroom for six-footers.

The short gear lever lies on the deep center tunnel just where the hand naturally reaches for it. Lower down is the handbrake.

The spare wheel lies flat just behind the seats, under a neat carpet cover, leaving space for a second spare on top or for small luggage and parcels. Fuel tanks holding 8.4 gallons are in the front fenders, leaving the whole tail free for a really useful luggage trunk capable of holding several big suitcases. Without luggage, all major masses are concentrated within the wheelbase.

The final look around shows excellent vision over the low-swept hood and through the wide curving rear window, so now let's go. As the engine bursts into song it becomes apparent that this particular car has the competition silencing system. More extensive decibel suppression will be supplied for those owners who want their cars mainly for road use. Clutch action is quite light, and engagement is not fierce, but it goes in with a firm no-nonsense bite. As you tramp hard on the loud pedal ready to ease back at the first sign of wheel-spin, you get the first surprise. This independent Lotus rear suspension takes all the torque there is with no trace of spin, and the rev counter needle goes swinging around as the car shoots forward with both wheels biting. At 4500 rpm the engine is beginning to scream and it comes as a surprise to find there are still 2000 rpm in hand. When you use the lot there is real action. With the 4.55 to 1 final drive in the car I was trying, 6500 rpm gave 29 mph in first, 49 in second, 82 in third and 109 in top. Using 5000 as a comfortable limit, the upward rush brings 23 mph in first, 37 in second, and 63 in third.

During my first mile at the wheel I was twitching the Elite through an S-bend at 80, then braking with a quick downshift to second, then first for a hairpin bend onto a main road where it went up to 100 mph without pausing for breath. The plastic structure feels as taut as a drum, there is no perceptible roll even on sharp bends taken at the limit of adhesion, and the response of the controls is so beautifully graded that the car seems to sense exactly what is expected of it.

After a few miles the Elite had imparted so much confidence that it seemed quite natural to be cornering with the throttle, helping the tail around or checking it almost without conscious effort. The car I tried had special Firestone tires with nylon carcass, which seemed to encourage a fluent style of driving.

Engine noise in the trim in which I tried it was obtrusive enough to become tiring on a long run, but wind noise seemed to be very low. With the touring-type silencing, everything should be right for covering long distances in comfort at awe-inspiring average speeds. The ride is firm over bumpy sections, but smooth and steady when cruising at 80-90 mph on main roads.

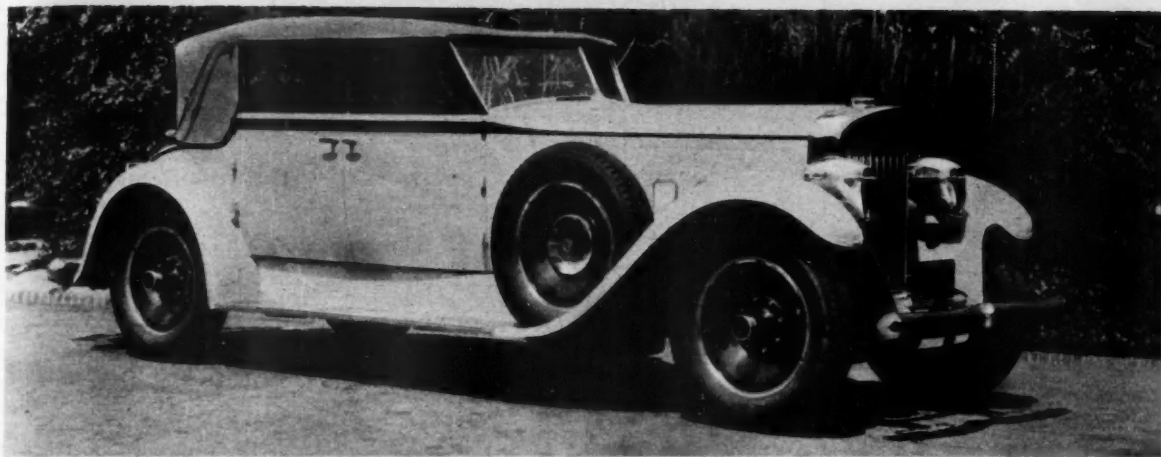
A quick speedometer check showed a correction of four mph at 60, so with due allowance for this the watches were produced for a standing start acceleration. First time, from 0 to 60 mph took 12 seconds. Next time, with better coordination of throttle, clutch and gear lever, it was down to 11.5 seconds. There was no time for more, but 10-11 seconds should be possible. As for stopping power, with four-wheel disc brakes (inboard at the rear) it is almost superfluous to say it was superb. It is not simply a question of having good brakes; the all-independent suspension really keeps the wheels on the ground, pulling the car up all square.

On this early example there were various details which still needed attention; the fit of the doors could be improved, and shock absorber settings were still the subject of experiment. Wisely, Colin Chapman is delivering the first 100 cars to buyers in Britain, so that he will be able to watch their behavior. It is therefore likely to be several months yet before the first deliveries are made to the U.S. but it is something well worth waiting for.

WHATEVER HAPPENED TO...

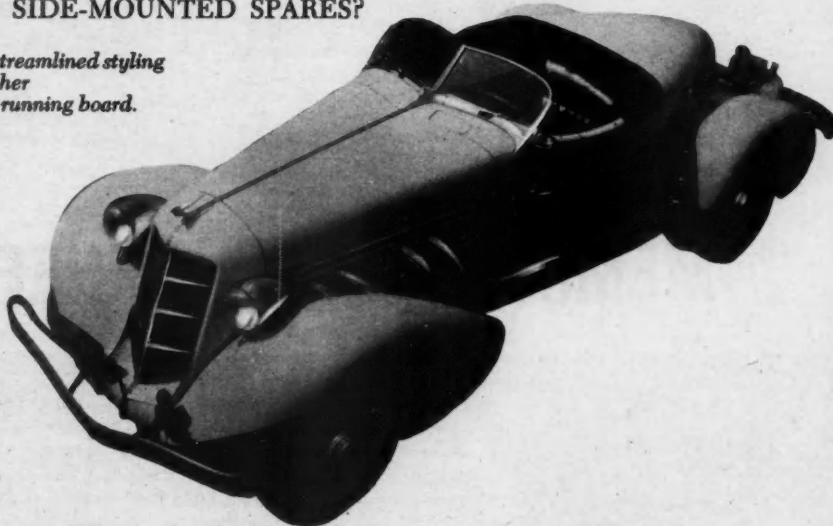
... THESE TOUTED FEATURES OF YESTERYEAR?

by Robert J. Gottlieb Classic Car Editor



... V-WINDSHIELDS AND SIDE-MOUNTED SPARES?

These features were eliminated when streamlined styling began to catch the public's fancy. Another victim of the new design was the lowly running board.



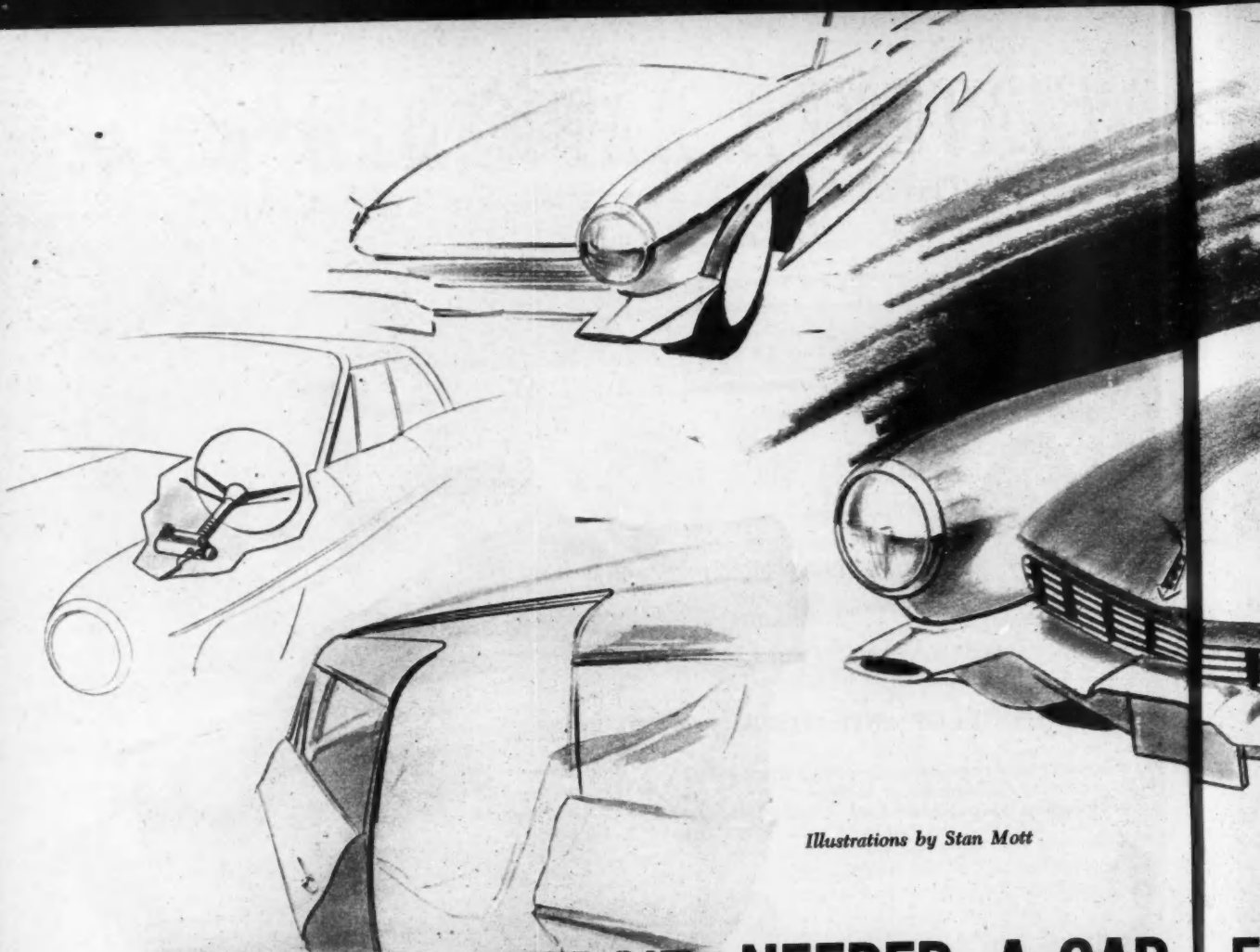
... SPEEDSTER BODIES?

Patterned after racing car bodies, the speedster will probably never return because of the change in race car body design. The tonneau cover on this well preserved Auburn is a concession to a modern sportscar accessory.



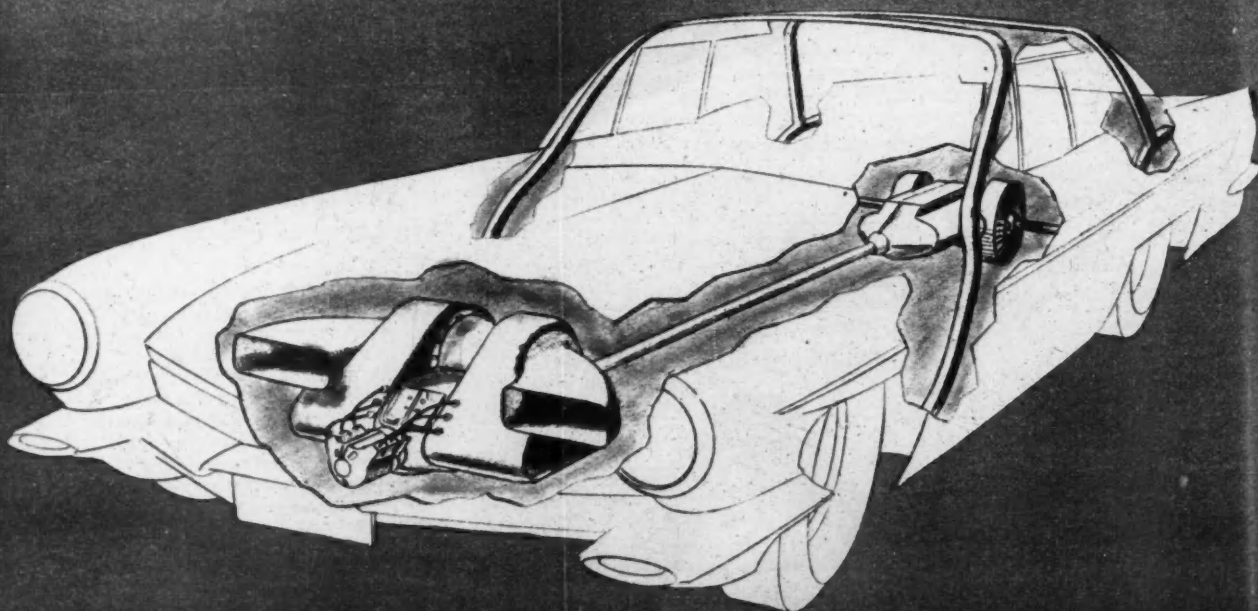
... SUN VISORS AND ALUMINUM CARS?

Sun visors began to fade from the scene in the early '30s, but reappeared as accessories in the late '40s. With today's wrap-over windshields not knowing where to stop, sun visors may stage a comeback. As for aluminum cars, only 10 of the model shown were built by Aluminum Co. of America in 1928. Axles, steering assembly, wheels and engine were made of the light metal. Only special bodies are made of aluminum today, but aluminum engines may soon be offered on some Detroit cars.

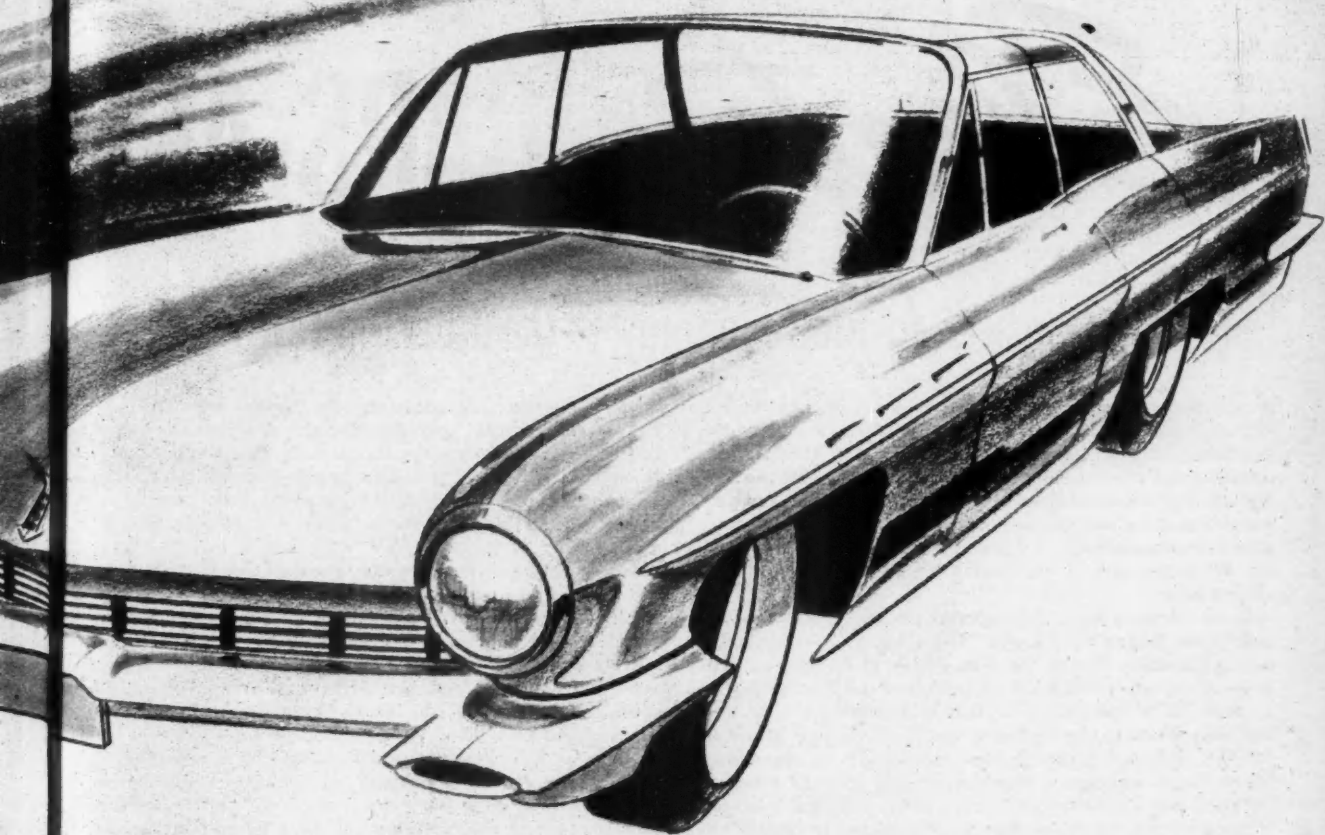


Illustrations by Stan Mott

MEMO TO DETROIT: NEEDED, A CAR



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R FOR BASIC TRANSPORTATION

LAST AUGUST we asked our readers to submit their comments on what they thought was, and is, wrong with today's cars. We said that we would pass on the suggestions that they (you) sent in to Detroit. This article, and these sketches, are the first results of that request.

Foremost among the desires of those readers who told us what they would like was a car that would more closely meet the qualifications of "basic transportation." Designer-stylist Stan Mott has interpreted these ideas and has come up with the following evaluations and drawings:

The wheelbase is 112 inches, with an overall length of 15½ feet and a height of 50 inches. Styling is of a conservative nature so that it will remain in style for a number of years. Fads and gimmicks have been eliminated as much as is feasible. Enough separate parts, however,

could be "face-lifted" with little difficulty (as shown in the upper left sketch), since the basic structure would be of unit body construction. The door would cut into the roof to allow greater freedom of entry and exit; this design has well proven its worth on the Cadillac 75 limousine.

From a safety standpoint, the readers voted for roll bars designed into the car. This could be done by having one pass through the front pillar, the roof, and then down the rear pillar (see sketch on left). There would also be a protective bar along the bottom of the door to protect occupants in the event of a side collision.

Another safety feature would be a hydraulic steering system that eliminated the use of a column, which many times becomes a chest-piercing projectile. What column there is would be adjusta-

ble to different drivers (see sketch, upper left).

On the subject of safety, a number of readers have suggested that a Safety Board for Cars be set up; its function would be similar to that of the Civil Aeronautics Board (or the newly-formed Federal Aviation Authority), which sets down safety regulations for all civil aircraft.

The readers also wanted a trouble-free powerplant, such as the air-cooled, horizontally-opposed six shown here. It would transmit power via the driveshaft to a de Dion rear axle, with the transmission and inboard rear brakes. These would most certainly be the most expensive components, but with enough of these cars in production, the price should compete on a very equal basis with any of the so-called "Low-Priced Three."

/MY

Electric CARS ARE

Here's one answer to fuel economy—the Charles Town-About

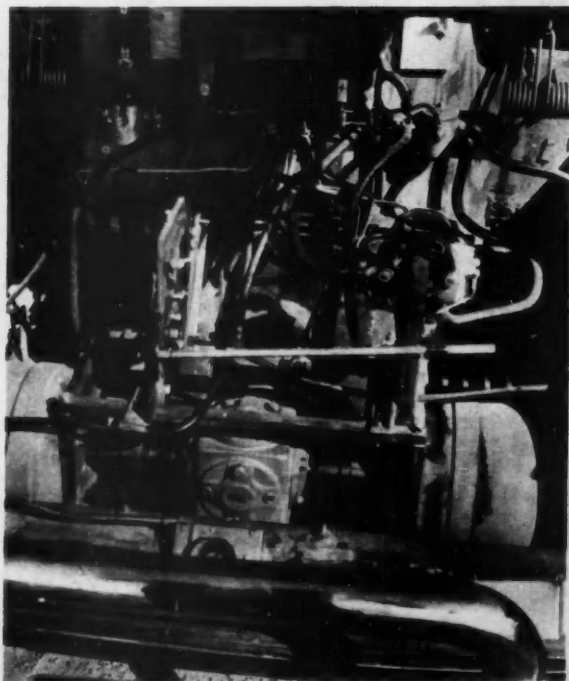
A new departure in electric vehicle construction; light, safe, noiseless, odorless, clean, durable, comfortable, simple in operation. Battery guaranteed for two years. In no other vehicle are all these desirable qualities combined. One motoring reporter waxed enthusiastic about the car, and further stated that there was just no point in waiting for price reductions or improvements . . . this was it! The car described was the Waverley, one of the best known of the early 1900 electric cars.

Some 59 years later, this reporter became quite enthusiastic while testing the Charles "Town-About," a completely new and modern electric car. This newest of American autos is being manufactured by the Stinson Aircraft Tool & Engineering Co. of San Diego, Calif. It is interesting to note the similarity between the claims of the old Waverley, and the new Town-About. *Light*: the new car features an aluminum frame, light suspension components, and fiberglass body. *Safe*: it has two roll bars built into the roof which are designed to support the weight of the car. *Noiseless*: the prototype makes no noise, except in the cab, which has not been sound-

proofed. *Odorless*: absolutely no odor. *Clean*: just everyday dust, no oil or grease. *Durable*: the components have been stressed by aircraft engineers, except for the aluminum frame, which was stressed by Alcoa Aluminum's engineers. *Comfortable*: the "Americanized" VW-type suspension, plus foam rubber seating, brings electric car comfort up to date. *Simple in operation*: the prototype VW transmission will give way to a two-position (low and cruising speed) electric transmission. Reverse by turning the key, which reverses the current. *Battery guaranteed for two years*: the complete car is also guaranteed for two years, and will be factory-serviced free!

The prototype looks similar to a Karmann-Ghia VW at the front, with large "Detroit" fins at the rear. In the interests of safety in heavy traffic, the Town-About mounts large steel bumpers and over-riders fore and aft. Outwardly, except for the absence of exhaust pipes, there are no indications of other than combustion propulsion. A glance at the space usually occupied by the jump seat, however, throws the casual bystander into confusion—it is filled with batteries! In the production version, the batteries will be in a box below

continued on page 58



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Lightweight, replaceable, separate-celled selenium batteries make up the power pack. The 48-volt system puts out 260 ampere-hours. Pack will be carried below the jump seat.

Two 3.2-hp 3300-rpm electric motors are geared into a 1 to 1 gearbox coupled to a VW transmission. Makeshift wiring will be replaced with multiple aircraft-type connections.

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Story and Photos
by Bob Rolofson



Beneath the stock VW dash are temporary instruments — two ammeters and a voltmeter. Prototype VW transmission will be replaced with an electric "Dual-range" transmission.



Stinson's new plant was designed specifically to handle production-line automobile manufacture. Beginning in April, the San Diego plant will produce 80 "Town-Abouts" per month.

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A FOREIGNER, so Webster's New World Dictionary informs us, is "a person born in another country," or "something from another country." It also states, "Loosely or humorously, a person regarded as an outsider or a stranger." We could interpret this then as meaning that anyone or anything from another country is a foreigner, just as we and our products are "foreigners in someone else's country."

This is a thought I always try to keep in front of me when visiting another country. This is why it also was particularly interesting to compare our cars to what we normally refer to as the "imports" in their home surroundings. It's certainly a most apt case of the shoe being on the other foot.

The possibility of comparison presented itself with a visit made to France last fall. Early in October of each year all the major manufacturers in Europe

put their cars on show at the Grand Palais in Paris. It is here that most of the cars are shown for the first time. In many cases, it is also the initial showing of Detroit-built cars — anywhere.

Everyone who is important in the European automotive business can be found here. It is a place to see and compare your own car against that assembled by the competition. It is a place to meet and discuss mutual problems. It is a place to watch trends. It is a place to test public reaction. And, it is a place to sell cars.

This year, about 10 per cent less people went through the turnstiles, and this was reflected in the amount of orders taken. Though one explanation is that as more cars get into the showrooms and onto the roads, the less the need for people to go to a show. Another explanation, however, is that the recent recession made itself felt in France as well as

in the U.S. and other parts of Europe.

Walking through the show I was struck by the fact that the Rambler American and the Studebaker Lark seemed to fit right into the market of small cars. Most of the other U.S. cars on exhibit seemed a bit incongruous, and horribly out of proportion.

Probably the best-looking of the small cars was the newly-announced Renault convertible (called the Floride at the time, but with a possible change to Caravel in the offing). For the in-between-size cars, the Lotus Elite (see page 44) seemed to outshine the rest, while in the larger class, the special Cadillac by Pinin Farina (Dec. MT) took beauty honors.

Of the American cars, the two that seemed to meet with the greatest Parisian approval from a strictly styling standpoint were the '59 Pontiac and the '59 Buick. They seem to be much more along the current styling lines of the

Inside the Peugeot factory a bare chassis moves along the assembly line, just prior to having the body drop onto it.

Each and every Peugeot is tested on a small track just outside the factory — for noises, rattles, steering and brakes.



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View from the top of the Arc de Triomphe generally includes a Paris traffic jam around Place d'Etoile, a nightmare for drivers and pedestrians.

best-liked European offerings, though in all fairness to our U.S. stylists, the Europeans have copied as many styling features from us as we have from them. Who influences whom is not the question—it's who achieves the best design, regardless of when.

Concurrently with the opening of the Paris Show, there is a Press Day at the track of Montlhéry, a few miles outside of Paris. The purpose is to give members of the press the opportunity to try out the latest French offerings. Unfortunately, I arrived in Paris too late to take advantage of this opportunity, but a few days later did manage to take a few laps around it in an English car that our European Editor, Gordon Wilkins, had brought over.

Montlhéry is a famous road course built in the early '20s, with no two curves alike, and designed to be the ultimate test for cars. It's said that no suspension system, no gear ratio, no steering is just right for Montlhéry. Even though it is no longer

used for racing, many of the French factories test cars there, including manufacturers who have their own testing grounds.

The full circuit of Montlhéry includes a banked oval (which now is used for high-speed runs) and a road circuit, which goes something like this: A fast, slightly bending right hand turn . . . a sudden dip . . . a very sharp right and another dip . . . a tight S-turn . . . another left . . . a sharp left, a slow S-turn and a hairpin right immediately following it . . . a sharp downhill left . . . a short straight . . . a sharp S with an increasing radius at the end, bending to the right . . . another sharp right . . . a straightaway . . . a downhill, fairly sharp right . . . a slow S . . . a sharp S . . . a slow left . . . a straight . . . then a long, high speed left running parallel to the first right. And all this takes place in about nine kilometers, or a little over five miles!

First I went around the course with Wilkins because of his familiarity with

the course. Then I tried a couple laps, but in the rain and with a car no more powerful than the A-40, I wasn't happy. It just means that I'll have to try it again—when the course is dry and when I have my hands on something like a Ferrari.

While I was in Paris, visiting the auto show and paying a visit to the fantastically-automated Renault plant at Flins for a second time with Johnny Green, an invitation to visit the Peugeot factory was extended to me from Francois de Peyrecave, President of Peugeot, Inc., U.S. This figured to be a good comparison, particularly since Renault and Peugeot have a working sales-and-service agreement in this country. I didn't figure on a further comparison that I was going to have—and that was how well a Renault Dauphine could stay up with a Peugeot 403 through the French countryside at night.

The Peugeot factory is located in Sochaux, some 260 miles west and south of Paris. Since I didn't know the way, Francois

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** (latest Bennett-Chalkin Survey)

Driving Around

continued from page 51

led and I followed in the Renault. Leaving the environs of Paris with only two red lights to lead me, bucking traffic that is always trying to get around you regardless if you're flat out or creeping, I was glad that Francois slowed up occasionally. The way out of the city was anything but straight.

Once we were in the country, the two red lights were all I had to go by. They (the lights) were passing up everything on the road from car to carts, and I did likewise. Into a town we'd blast, where the only lights we'd see would be our own headlight beams reflecting off the cobble-



Trip around Montlbery circuit in A-40 was disappointing; course demands fast sports car.

stone-surfaced streets. All windows were boarded up and people were in their homes, even though it was fairly early.

The fact that I was able to stay up with the Peugeot, even though Francois was kind enough to cut back a bit on the speed he might have been turning if I weren't following, speaks volumes for the cornering ability of the Dauphine. Johnny Green, in the rear seat of the Peugeot, commented later that he watched for my headlights around the countless sharp turns. As long as they stayed horizontal, he knew everything was okay.

A tour through the Peugeot factory the next day brought many interesting things to light. The three divisions of Peugeot—for cars, bicycles and scooters, and tools—employ 18,000 workers and produce 800 cars per day on two assembly lines. Assembly plants in other countries number six.

Some of the inspections performed on various parts and components show why Peugeots hold together. All rear axles are inspected for noise, as are the transmissions, in soundproof booths. Every gear of

the transmission is checked for sound, then first, second and third gears are matched to the shaft. The chrome alloy cylinder sleeves (inside the cast iron blocks) are given 100 per cent inspection for inside and outside diameters. Each aluminum piston is weighed and balanced. Each rod assembly is also weighed and balanced so that all four units will balance for each engine. Each crankshaft is statically and dynamically balanced. After the engine is assembled, they are put through three tests that take about an hour total: 1) for leaks (where an outside source of power is used), 2) for horsepower rating, and 3) for maximum revs.

At the end of the assembly line each car is checked for operation of all electrical components, the heater, other accessories, and any unusual noises in the drive train. From there the cars are driven out onto a short, three-lane track that has various surfaces: cobblestone, bricks, rough asphalt, railroad ties, and cement blocks. There they are taken around a few times while they are being inspected for noises, rattles, proper steering response, brakes, overheating, and headlight adjustment.

Leaving Sochaux late that afternoon, the Renault took me north to the town of Belfort and on to Strasbourg, close to the Rhine River. Here I had to wend my way through crowds of bicyclists who had descended on the streets like a swarm of locusts on a crop. Except for this, crossing over to the German side was a cinch.

An immediate change was evident. Where the French signs were black-and-white and unlit, road signs on the German side were of different colors to indicate routes and consisted of translucent panels with lights on the inside. These signs made it easy to find my way over a narrow, winding, and badly-surfaced road to Karlsruhe, where I picked up the Autobahn (Germany's version of our turnpikes) to Stuttgart.

After spending that night and the next day with our German editor, Günther Molter, he led me in his new Borgward west toward the Neckar River valley, north to Heidelberg, then west, north, south, west (never long in one direction, and never straight) until we arrived in France. From there it was a fairly straight shot back to Paris.

This 1002-mile trip in the Renault gave me a new respect for the Dauphine. Its handling on European roads, which are almost entirely two-lane with seldom a straight stretch of more than a half-mile, made it a joy to drive. Its tiny 845cc, rear-mounted engine pushes it along at speeds up to 70 mph with no particular strain, though you have to use the three-speed gearbox quite a bit. For at least 95 per cent of the trip I had my foot clear through the floorboard into the front baggage compartment, yet it averaged an amazing 33.6 mpg. I can see why it's popular over there as well as in this country. /MT

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TRENDS in New Products

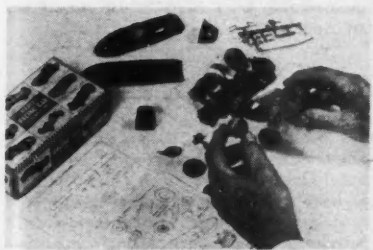
(Information below is based on news releases from the manufacturer or distributor. MOTOR TREND has not tested any of the specific products listed, and therefore does not necessarily endorse them. Tested items are featured in our Product Use Tests.)

GAG SWEATERS to go with car, hobby, or just fun will be painted to your own design in bright colors by The Baron and Roth, 9001 Atlantic, MT-2, South Gate, Calif. They will



furnish a high quality sweatshirt in sizes small, medium, large, and extra large, with your design on the back for \$5.50 each, no C.O.D.'s, and Calif. buyers must add 4% tax.

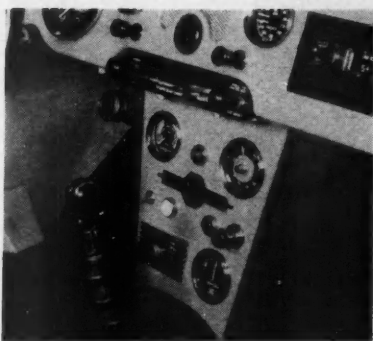
MODEL FANS will enjoy the exacting detail and simplicity of construction of the 1/24-scale model Grand Prix racing cars offered in the new Merit kits sold by Autobooks, 2900-R Magnolia Blvd., Burbank, Calif. Three new models—BRM, Formula II Gor-



dini, and 158 Alfa Romeo—are exact 6 1/2-inch-long replicas of famous European road racing machines. No tools are required to assemble one or a complete stable of these cars whose names are a byword the world over. Connaught, Mercedes, Lotus, Maserati, Jaguar, Ferrari, Aston Martin, Cooper and Vanwall are also available in addition to the three new models. Priced at \$2.25 singly, Autobooks has a special offer of \$12.50 for

any six, \$18.50 for a choice of nine, or \$24 for all 12.

FOR MG OWNERS, a new box panel that mounts between the drive tunnel and dash is offered. The new unit is designed to display a three-piece optional instrument grouping with related instrument signal lights, switch and smoking accessories. Manufacturer recommends auxiliary instrumentation to include a vacuum gauge, ammeter, and temperature gauge. Weighing six pounds, the panel



assembly is stamped of heavy-gauge steel, finished in neutral gray, and mounts on two brackets behind the dash. Presently in production for MG-A, MG-TD and TC models, the panel will shortly be available also for Jaguar and Triumph. Capstro Specialties, 19316 Southgate Ave., Cleveland 22, Ohio, will quote prices based on instrumentation required.

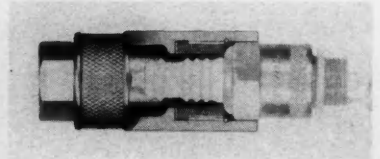
WHEN YOU FEEL the need for a quick cup of coffee on the road and don't wish to make a restaurant stop, just plug a special coffee maker into your cigarette lighter and presto—three cups of your favorite blend can come to a boil as you roll along! The new Coffeequick is also handy for warming soups and bottles,



and operates on 12-volt DC. It measures 12 inches high overall, is made of anodized aluminum with double walls, and has a stainless-steel cover. Price is \$14.95, ready to use in either 110-volt AC or 12-volt DC. For \$4 additional, a combination AC-DC model is available. A special dashboard receptacle,

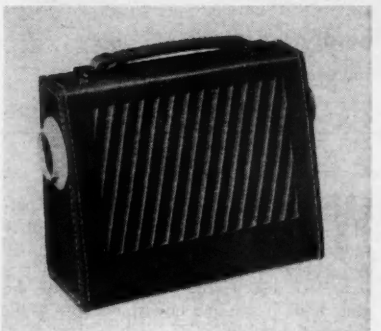
if no lighter is available, costs \$1. Coffeequick, Dept. 123, Box 643, Ithaca, N.Y.

MAGNETIC SPARK PLUG WRENCH by Champion is a handy aid for installing and removing plugs in their hard-to-reach locations on some of the newer engines. A heavy Alnico magnet is built into the thin wall, 1 1/16-inch-deep socket to secure the plug by the outer shell, leaving the insulator clear of any strain



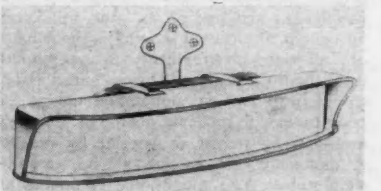
that might break it. It is available at the present time only to garages and service stations who are Champion Spark Plug retail outlets.

BUILD YOUR OWN portable transistor radio to take along on those away-from-home junkets. A molded plastic case with pull-out carrying handle is included. Six transistors are used, and a four-by-six-inch speaker provides big tone quality. Transformers are pre-aligned so it is ready for service as soon as



construction is completed. A built-in rod-type antenna gives reception in all locations, and standard size "D" flashlight cells are used for long battery life. Cabinet is two-tone blue molded plastic with gold inlay and measures 9"x7"x3 1/4". Two choices are offered: Heathkit XR-1P, \$29.95; Heathkit XR-1L, \$34.95. Latter has leather case and carrying strap, as shown. Write Heath Co., Benton Harbor, Mich.

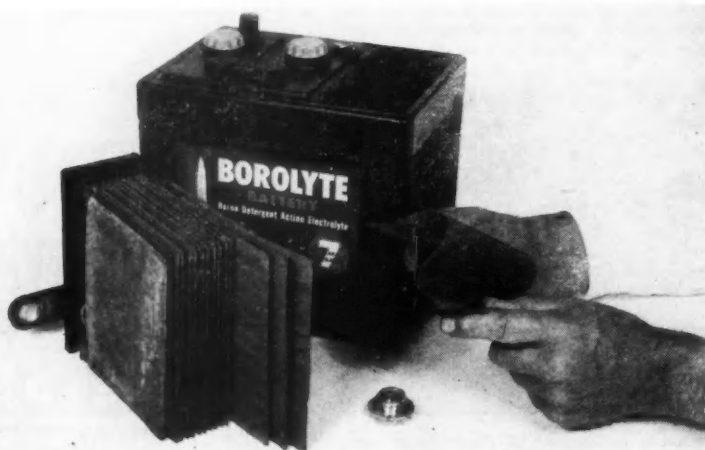
GIANT REAR VIEW MIRROR, designed to make the most of increased rear glass area in modern cars, slips over existing mirror and extends angle of view to maximum. Twelve



inches of curved length fastens to any inside mirror in a few seconds with the clips furnished. Available from Sta-Dri Products Co., 147-47 Sixth Ave., Whitestone 57, L.I., N.Y. for \$5.98 postpaid.

PRODUCT USE TESTS

Conducted by **Charles Nerpel** Technical Editor



Borolyte Battery



WHAT AMOUNTS TO a custom-made battery is currently being produced on a production-line basis by International Tire and Rubber Co., of Los Angeles. Automotive, industrial and marine units, all with the same high output and quality, are now available to the public.

Automotive batteries tested under normal use conditions require months and often years (if the batteries are good) of observation to determine their worth or establish the claims of the maker. MOTOR TREND had an opportunity to observe unusual heavy-duty use of an automotive battery while testing a similar battery under normal operating conditions.

We have been running a 12-volt Borolyte

battery in an MG-TC. Vibration is quite severe, and the battery compartment extends inward into the driver's compartment, where acid leaks are hard on shoes and socks. Frequent starts, a radio, and powerful headlights take their toll of batteries in these cars. This particular automobile is driven in spurts, i.e., daily driving is hard, with a lot of stops, but then there are periods of a week or 10 days when the car just sits. During the past three months it has not yet failed to turn the starter as fast as when the battery was brand-new, has not leaked a drop or boiled over during late summer hot spells near 100°F (no telling how high in the engine compartment), or showed signs of corrosion, leaking, or melting around the top.

When the heavy industrial batteries on a 12-volt portable electric hoist had to be replaced, a pair of six-volt Group IV Borolyte light truck batteries were hooked in series to the hoist motor. This hoist is used by a floor covering manufacturer to move rolls of rug material weighing several hun-

dred pounds. Former batteries required recharging after eight to nine hours of use. The two Borolytes have been giving 11 to 12 hours of service before charging, and charging time is $\frac{1}{3}$ less than the batteries they replaced.

A study of the construction and materials of these batteries shows why they hold up so well and put out the current that they do. Positive plates .115-inch thick, micro-porous rubber separators made by U.S. Rubber Co., solid terminal connectors, hard rubber case and terminal mounts, a boron compound derivative wetting agent in the electrolyte, specific gravity tailored to the climate, and good sealing of the entire unit give this battery a higher ampere-hour rating than competitive premium units.

Analyzing still further . . . top grades of automobile batteries have a positive plate thickness of about .095-inch. Most of them use phenolic impregnated fiber or wooden separators. Borolyte employs a slow formation process for their plates, nothing new in the industry except that it takes $\frac{1}{3}$ longer than most commonly used methods but produces a harder, more durable plate. Final cycling (all Borolyte batteries are delivered on wet charge ready to use) before delivery insures long shelf life, and specific gravity and sealing are tailored for temperate climates or the extremes of arctic or tropical use, depending on the area in which they are to be used.

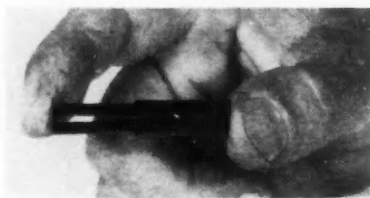
Wetting agents in battery electrolytes, like other features of the Borolyte battery, are not unknown in the battery industry. This particular one was the result of about four years of amateur home experimenting by the manufacturer, who had to do it the hard way as he is not a chemist. Subsequent tests by chemists with the solution under actual sulphuric acid electrolyte mixture tests proved his findings to be correct. Electrolytic penetration, aided by the wetting agent, and the ability of the agent to survive indefinitely in the sulphuric acid, contribute largely to the long life, high output, and short recharge time for these batteries, each of which carries a service and prorated exchange warranty. Prices start at \$31.50 for the smallest six-volt passenger car battery and extend as high as \$250 for extra-heavy-duty marine and stationary unit.

Manufacturer and distributor is International Tire and Rubber Division of Ward International, Inc., 2126 S. La Brea Ave., Los Angeles 16.

Turbo-Jet Converter

A DISTRIBUTOR ATTACHMENT that converts a conventional automobile engine to "run half on gas and half on air" and still "save 50 gallons of gas each month" is the subject of full-page advertisements in newspapers throughout the country. This is quite a claim considering that an automobile engine in poor tune will consume about 14 times as much air by weight as gasoline by weight. A gallon of .70 specific gravity gasoline weighs about 5.83 pounds, and 14 pounds of air is equal to about the same amount contained in a fair sized closet (approximately 168 cubic feet).

Further claims state that "you'll actually convert the oxygen in ordinary air into a rich, new source of power." Now the very



reason that an explosion takes place is due to the air, or rather the oxygen content of the air, that is mixed with the fuel at the carburetor. Supercharging, for example, results in more power from an engine by making possible the consumption of more fuel,

only because more air is available to maintain the basic 14 to 1 air/fuel by weight ratio. Oxygen-bearing fuels such as nitro methane provide more power because it is possible to use more of the fuel since it provides its own oxygen during combustion, but still maintains a reasonable air or oxygen ratio.

The distributor attachment tested—a bit of blackened aluminum alloy—is billed in the instruction sheet as "new miracle metal" with "super condensing qualities." The blackening is apparently anodizing which has wonderful insulating qualities, and unless the contacts fit tight enough to scratch through it, there will not be sufficient current flow to start the engine.

The only thing our tests showed was that the unit had no visible effect on performance or gas mileage. A 180-mile trip over a route we travel so regularly we could measure the fuel needed in advance and not miss our destination by more than a mile or two, was made to test the gas-saving claims of the Turbo-Jet Converter. The 90-mile outbound leg was made without the converter and the

return 90 miles with converter installed. Mileage was within 1/2-mile per gallon of our regular fuel consumption for this trip. Weekly around-town gasoline mileage showed no increase or decrease over a 14-day period. Unless we mistakenly received a wayward bit of material from an automatic screw machine, we do not possibly see how this attachment can do anything for spark in-

tensity or fuel economy. The guarantee, "lifetime" that is, only warrants against defects in material or workmanship, not the word of the Automotive division of Douglas Manufacturing Co., 61 W. Main St., Bogota, N.J., that the product will produce the results claimed. According to the results of our test, we will have to do a lot of out-of-gear coasting to get back our \$3.98.

Car-Skin Cleaner

CAR-SKIN, A RECONDITIONER for automotive finishes, is a fast-cleaning solution that dissolves surface scum and oxidation and removes them without hard rubbing. The manufacturer claims that this is accomplished without abrasives, and from the tests, we believe it.

Maroon finishes, known for their rather rapid weathering, usually wear thin in a short time due to the frequent "cutting" necessary to keep them looking like new. Abrasives remove an appreciable amount of paint with each use, as is shown by the paint color picked up on the rubbing cloth. The hood of a Mercedes 190-S that is seldom garaged and requires a lot of attention to keep it shiny, was treated once over lightly. With hardly more than the effort to work the solution over the area, the surface was restored to the deep smooth surface and color of the original paint. Only faint traces of the maroon color picked up

on the cleaning pad, yet the paint surface was slick and free from any trace of oily film.



Car-Skin also works beautifully on household furniture, imparting a high gloss to finely finished wood and metal surfaces without leaving a dust-catching film common to many furniture polishes.

Car-Skin Products Corp., Flemington, N.J., sell their product through parts houses and service stations for \$1.45 for a 16-ounce can. To preserve the newly cleaned surface the manufacturer recommends the use of either their Car-Skin sealer or tempered wax at \$2 per can.



HRL Colloidal Graphite

HEAT-RESISTING LUBRICANT in the form of colloidal graphite is being marketed under the trade name of HRL. Graphite, long known to be a terrific lubricant because of the slick surfaces of its tiny flakes, has posed problems of keeping it suspended in liquid mediums long enough to circulate to surfaces requiring lubrication. The tendency to settle out also caused clogging of oil lines and small oil passages. The most commonly used form of graphite is a mined product, containing some silicates and other abrasives that are almost impossible to remove thoroughly. Despite these drawbacks, the fantastic lubricating qualities and the ability to stand temperatures up to 1500°F have made graphite desirable for many industrial uses.



Acheson Colloids Co., of Port Huron, Mich., developing processes for cleaning petroleum oil, discovered a method of blast furnace extraction of graphite from this type of oil. The graphite thus produced is exceptionally clean and free from abrasives and other impurities, and by the nature of its extraction is able to stand up at temperatures close to 5000°F. Recognizing the value of such material, Acheson perfected a method of grinding the graphite flakes into particles as small as 40 millionths of an inch. It is impossible to handle the material in this fine state as it has the consistency of cigar

smoke and must be put into suspension in some form of liquid.

Because of their microscopic size, this is no problem as they will remain suspended indefinitely in water, alcohol, mineral or vegetable oils, thinners, solvents and liquid resins, but will pass through the finest grades of laboratory filter paper. Heavy concentrations of Acheson graphite in petroleum oil are further blended with highly refined 30 weight oil by HRL of Los Angeles into 10 per cent solutions for crankcase additives for automobile, motorcycle, and boat engines.

The theory behind graphite lubrication is that the tiny flakes adhere to the contacting surfaces as if they were electroplated, and the friction is between layers of graphite rather than the metals. It does not run off if allowed to sit for any length of time, and will not wash off with fuel or vanish in a cloud of blue smoke from heat. It will remain suspended in any kind of oil, castor or mineral, detergent or not.

We mixed HRL with a quantity of Castrol Racing oil (which will form a sludge if it is used with any other kind of oil) and allowed it to sit in a tall glass vial for two months. There was no indication of separating or sludge formation which made us feel better about adding several ounces of it to the Castrol Racing in the tank of a Formula III racing car, the one-cylinder engine of which had been reassembled with HRL after a ring and bore job. Despite rather large clearances on an engine of this type, stiff running is noticeable for the first few laps of the run-in period. With HRL, this engine had all the compression and feel of a brand-new engine but ran as if it were already broken in.

At first the oil was quite black from the graphite additive but as running time built up to about 50 miles, the oil returned to its original like-new color. As there is no oil filter on this engine other than a wire screen, the oil lost its black look as the graphite in it was deposited on the bearing surfaces.

Porsche engines, whose cold starts are murderous because of the raw gasoline that seeps into the barrels and pools along the cylinder walls, often have a couple of blow-by barks on the first few revolutions until the oil reaches the rings. Using a Porsche as a test car, MOTOR TREND added 1/4 of a can of HRL to the oil, and put the rest in a full tank of gas. Following the directions on the can, we added 1/4 of a can to the fuel each time the tank was filled, and 3/4 of a can to the crankcase after each oil change. Before the first tank of fuel needed replenishing, the engine had a noticeable reduction in running noise, and cold starts were more like those of a warmed-up engine. In the Porsche it was very easy to notice engine noises, or the lack of them, since in air-cooled engines there is no water jacket to deaden the internal sounds.

We believe that this type of lubricant will also reduce the rather high valve guide wear in engines of this design, but will have to wait for a top overhaul to report on this. The way this engine is running after 24,000 miles, an overhaul is a long way off.

New car break-in periods are shortened by this additive. This does not mean that one should drive the car hard sooner than factory recommendations, but there is a noticeable freeing of the engine within 20 miles after adding HRL to the oil and fuel. Several new car dealers in the Los Angeles area have

PRODUCT USE TESTS

continued

already discovered this advantage and are automatically adding HRL to the new cars they deliver. The company makes no claims

for this product as an engine cleaner or its ability to clear sticking hydraulic lifters. They do, however, make a blend of colloidal graphite with solvent for this purpose called GAF (the letters for "fast acting graphite"

spelled backwards) which we are now testing.

HRL in 12-ounce cans, and GAF in an 11-ounce size, each sell for \$1.50 and are available from the manufacturer and distributor: HRL, Inc., 923 E. 3rd St., Los Angeles, Calif.



Simichrompoli Metal Polish

SIMICHROMPOLI, A PASTE CLEANER for plated and alloyed metals, is a German product imported and marketed by Competition Chemicals, Iowa Falls, Iowa. Little or no rubbing is required with this paste on chrome, brass, copper, and even the family silverware. One of the nice things about this polish is the small amount required to do the job. Cleaning is accomplished more by chemical action than abrasives, and no dry residue is left in grooves or corners.



Aluminum is also listed among the metals cleanable; on smooth surfaces of this metal a mirror-like finish is easily produced but on satin or brushed-finish soft alloys—such as used on custom and race car bodies—the black oxides removed by the polish remain imbedded and the metal takes on a dull color that must be removed with cleaning solvent. Anodized aluminum that is being used in increasing amounts on the newer cars cleans well with this polish, as does chrome and the brass around the house. The product is handled by most sportscar garages, parts dealers and jobbers throughout the country, or is available directly from Competition Chemicals, or Steen Lubricants, 19 E. Valley Blvd., Alhambra, Calif. Sells for 69¢ per tube.

Midland-Ross Power Brake

POWER BRAKES for that older car or new one are available in a compact bolt-on unit manufactured by Midland-Ross Corp., of Owosso, Mich. Most of the power brakes supplied on late model cars are of the vacuum pedal assist type, but the Midland unit uses engine vacuum to increase master cylinder hydraulic pressure, a system used on heavy-duty trucks.

MOTOR TREND's test unit was mounted on a 1955 Dodge by Bill Ginder, the man who makes the engine modifications on our KaiSoto laboratory car. We wanted this done by a competent mechanic, not only for the quality of his work, but to keep a time rate card on the job to see what the average installation charges would be if one did not desire to do the job himself.

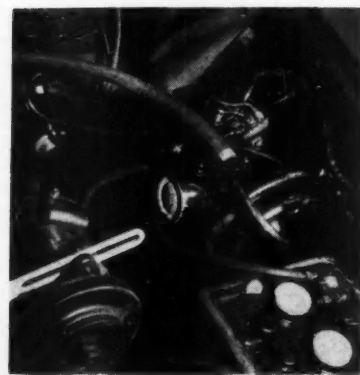
The unit was mounted well forward on the left engine compartment side panel, but could have been mounted just about anywhere because of the generous amounts of hose and tubing supplied. The bracket that was with the test unit was not for this model

car but some bending made it fit the selected spot with little trouble.

A few hints for the best reliability might be well to mention here. If the unit is mounted on the body and the car's master cylinder is frame-mounted, be sure there is enough copper tubing to take up the difference in vibration. The same holds true with the vacuum line to the engine.

Braking with this unit is not as sensitive as with pedal-assisted power brakes. The pedal stroke is about the same and there is a good feel to it, but a little extra pressure really turns on the power when needed.

Though its suggested retail price is a lot more, the Midland-Ross unit is selling in parts and brake supply houses around the country for about \$25. Average installation charges should be about \$10.





Questions and Answers

What is it—Best Car Buys is a listing service . . . a publication which is sent you every six weeks. It is an organized effort to bring to you from hundreds of sources throughout the United States a list of new and used cars that you may purchase at dealers wholesale or below . . . it is an organized effort to screen from thousands of current wholesale buys the very best ones and present them to you in published form, describing the car . . . the equipment . . . the price . . . the address of the seller and complete instructions for buying wholesale.

But how can I buy wholesale . . . I am not a dealer! True, many of these cars can be bought only through a licensed dealer so we have arranged for a licensed dealer to buy them for you. You will be given a registered number and card which will be submitted each time you wish to make a purchase . . . it's as simple as that.

What type of cars will I be able to buy wholesale! Practically every make and model . . . NEW and USED . . . American and Foreign . . . New cars ordered to your specifications . . . Used cars from the 1950 models through the 1958's . . . sedans, hardtops, wagons, convertibles, trucks, even cars from overseas . . . direct to you.

Where do these cars come from! The giant auto wholesalers who sell large volumes of cars to the used car dealers . . . private company fleets who sell every one or two years . . . distressed new and used car dealers who must reduce inventory . . . car leasing agencies . . . car rental agencies who may sell a car after four months of use but usually after ten to twelve months. Federal, State, County and City agencies who dispose of cars by bid . . . fleet brokers.

What is wrong with these cars . . . they are so cheap! What at first may seem like a gimmick can be explained if you understand the sound business principle behind these prices. First of all, remember these are not retail prices, in fact many are below the average wholesale and are exceptional buys for the car dealer as well as for you. These cars are normally sold only to the car dealer for resale on his lot and if you didn't know how and where to buy direct you might end up buying one of these same cars from his lot and be paying him a profit instead of making one for yourself. The fact that you can buy some of these cars below their actual wholesale value is not because they are wrecked or damaged but because they are usually fleet cars and are sold under a different system than the buying and selling of single units.

As an example let us examine a typical situation where the fleet user is an insurance company who buys 300 cars each year. To begin with they buy from the dealer who gives them the lowest bid . . . these prices are usually \$25.00 to \$50.00 over the dealers wholesale. After the company has purchased these cars they set up a tax depreciation on each car which will allow them to sell this car at the end of one or two years for a very small sum compared to its current market value yet justify this loss or depreciation from a tax standpoint . . . this is the first explanation. When the company is ready to buy another fleet the dealer who sells the new cars is rarely in a financial position or willing to take 300 used cars in trade on a gross profit of \$25.00 a car. Therefore, the insurance company must dispose of their own cars and this is usually done through the giant middleman or fleet broker who will bid and buy the entire fleet. Since his success is dependent on buying and selling as fast as possible . . . so that he can release his working capital for future bids . . . he sells price . . . for he knows that this is the only way he can unload these cars fast enough . . . his outlook on the car market is how much can he make on his investment in how short a time . . . not what the market potential is for a single car. His formula is simple . . . he divides the total number of cars into total price he pays the insurance company and adds a profit suitable for his risk investment and this is the price all 300 cars will be sold for . . . a very democratic action since among these three hundred cars some may be driven 9000 miles while others may be driven 40,000. You see it will be possible for you to benefit tremendously from this system.

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ELECTRIC CAR

continued from page 48

the jump seat. Test instrumentation (two ammeters and one voltmeter) hangs below an otherwise stock dash.

Starting is unbelievably simple: just pull a knob, turn the "ignition" key, and the car is ready... a condition indicated by *complete silence*. Shift into first, step on the throttle, and the car moves away. However, because there is no soundproofing in the test car, it rumbles and you can hear the familiar high-pitched whine of the two 3.2-horsepower motors. Acceleration in the prototype is a bit jerky because of the temporary button-type rheostat switch, which will be replaced by a smooth sliding unit.

Since the test car was a very expensive one-of-a-kind, I made no abrupt starts, stops, or turns. With its top speed of 58 mph on the level, the Town-About easily kept up with average freeway traffic. Even with 65 per cent of the weight at the rear, the car corners well within its capabilities. The 2.4 turns lock-to-lock and 18-foot turning circle make traffic driving a pleasure. The trunk of the prototype contains a maze of wiring, with electrical components hanging from every conceivable type of mounting. This was done to isolate the equipment for quick checks by Stinson engineers. The production version will be compacted through the use of aircraft-type multiple cables and connectors.

For city dwellers, the Town-About will really be the answer to cheap, durable, second car transportation. As implied by the name,

weight units for missile research, which could possibly extend the Town-About's range many times over. West Coast parking lot moguls have been approached (and are enthusiastic) with the idea of installing "charge meters," which would charge Town-Abouts while owners were shopping, or working at the office.

This rebirth of the electric car is the result of a luncheon chat between Deane Van Noy, president of Stinson, and Dr. Charles Graves, a dentist, inventor, and physicist. Both men, independently, had been toying with the possibilities of building an electric car. Van Noy was already manufacturing four-wheeled electric golf carts (Tee-Birds), and had quickly realized the possibilities of the electric drive. Meanwhile, Dr. Graves had been collecting data and doodling plans for various types of electric drives.

Two years later, after many trials and tribulations, they had built a factory designed to mass-produce electric cars, completed the mechanical engineering and produced a working prototype, and were almost finished with detailed tooling plans. As this story goes to press, the components are being tooled by various Southern California companies, such as Convoir and Magesco.

Having developed the car in secrecy, it was with amazement that Stinson began receiving huge bags of mail inquiring about the car. It seems that the *Kiplinger Report* had casually mentioned that an electric car was being developed somewhere in the San Diego area.



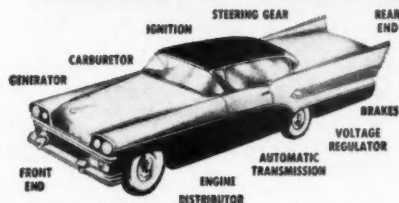
Author (center) discusses electric car with developers Dr. Charles Graves and Deane Van Noy.

it has been developed for use within the limits of a city. The only real problem seems to be range. The prototype is relatively heavy, but will drive the car 77 miles on one full charge. From a "down" condition, it takes about seven hours for a good tapered charge. The charger (supplied with the car) automatically sets its own charge rate according to the condition of the batteries, cutting relative charging time. Stinson engineers expect the production model, with its aluminum frame, to raise the range in excess of 100 miles right off the bat. A half-dozen battery companies are working on high amp, light-

The resulting mail broke a record at Kiplinger! As a direct result, the Stinson Company has received over 90,000 pieces of mail from 33 states, Mexico, Canada, and Belgium.

To sort of prove a point, Deane Van Noy allowed me to open his morning mail. In general the mail was from brokers and private parties desiring stock quotations, both students and engineers asking for technical information, dealers seeking franchises, a woman who wanted an electric car because the smog control board was after her 1947 car, and a pile of four-digit certified checks from power and light companies ordering cars for trial! /MT

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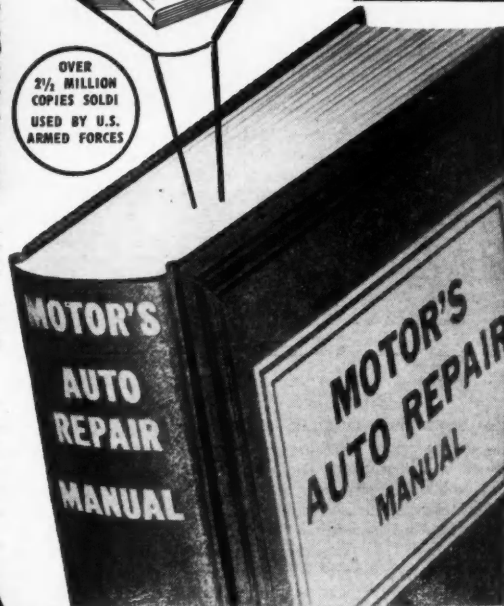
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Makes lights 50% brighter...

Guaranteed to outlast your car! ...

Charges and re-charges automatically! ...

Secret alloy plates defy decomposition...

Eliminates forever the nuisance of adding water...

by William Carroll

LAUGHTER DURING LEGAL PROCEEDINGS is as popular as bees in a nudist colony. However, a few months ago hearing room walls shook with merriment, and attorneys held their ribs, when a battery "manufacturer" jumped from frying pan to fire. He was reported to have displayed an automobile battery to Los Angeles city attorneys seeking information about purported misleading and inaccurate advertising copy. This sample battery, enclosed in a carton, had its top cut away so a jelly-like substance could be seen covering the battery plates. During the hearing, the manufacturer made repeated references to his battery as being a "Dri-Cell Battery" of unique ability. It is reported he also made repeated denials that his "Dri-Cell" was in any way identical to the "Waterless" battery made by a company using the same address as the present corporation. His speech completed, the manufacturer is said to have removed the "Dri-Cell" from the carton to show its beautiful case! Then everyone—but the manufacturer and his attorney—began to laugh. The battery case was labeled "Waterless."

This was only one episode in a long fight by regulatory bodies against makers of fraudulent batteries and battery additives. Over 20 years ago, in 1934, the Federal Trade Commission issued a complaint against the Lightning Co. of St. Paul, Minn. The Lightning Co., charged the F.T.C., was selling a product guaranteed to be "A self-charging, super-electrolyte, which charges batteries instantly without putting on the charging line, makes old batteries work like new and doubles their life." Chemical analysis disclosed the product to be epsom salts with a small amount of glycerine and alum, a gallon of water and a half gallon of sulphuric acid. The Lightning Co. had

been selling suckers a few useless chemicals and new battery electrolyte at an inflated price!

In a later complaint (Docket 5286), against Anti-Co-Rode Laboratories of St. Louis, Mo., the F.T.C. said, "The company falsely represented their preparation would stop formation of lead sulphate, restore acid solutions to usefulness and was anti-corrosive." Facts determined by the F.T.C. showed the preparation contained copper and iron. They tend to increase spontaneous discharge of batteries, resulting in the formation of lead sulphate and aggravating conditions the powder was represented as curing. An F.T.C. investigator reported, "Its use does not stop corrosion or formation of sulphate."

AS RECENTLY AS 1952, the F.T.C. hit Ever-Charge Products of Dallas, Tex., who were selling a powdered preparation similar to the Lightning epsom salt package of 1934. The Ever-Charge people discontinued business when Post Office officials labeled their product a fraud. In other cases, F.T.C. legal eagles filed against false or misleading advertising in connection with sales of solutions for auto batteries, only to find the complaints would be dismissed because the maker had gone bankrupt.

Packages of powder for a dollar are small pickings compared to the rash of battery frauds which began shortly after the September, 1948 issue of *Reader's Digest* hit newsstands. One article discussed nickel-cadmium batteries found by Allied intelligence officers inspecting captured German equipment. Such batteries had long been used in Europe for military service because they provided electrical service far in excess of our lead-acid batteries. However, nickel-cadmium

FRAUDS!

batteries are so expensive that only military or industrial users can afford them. They never became popular in the United States.

Shortly after the *Reader's Digest* article appeared, other national magazines began publishing advertisements which claimed wondrous properties for entirely new types of batteries. One such full page included this startling information:

WHY DO BATTERIES COST SO MUCH . . . wear out so soon? . . . 47% of all car owners . . . pay from \$16 to \$28 for a new battery.

HERE ARE FACTS . . . no reason why a battery should not be built that would last 5 to 6 times as long as conventional batteries . . . such batteries have been built for years . . . not available . . . because of foreign patent rights.

AT LAST . . . basic German patents plus American production know-how . . . combined to produce this . . . battery. CHARGES AND RE-CHARGES AUTOMATICALLY . . . batteries discharged more than 400 times . . . "bounced back" to life within minutes. Test batteries . . . in operation 10 years . . . no one knows how many additional years they may last. SECRET ALLOY PLATES DEFY DECOMPOSITION . . . ordinary battery plates crumble, fall to bottom of the case and eventually "short out" . . . amazing plates developed of a special alloy of high molecular stability.

HIGH AMPERAGE ENGINEERED FOR SUB-ARCTIC USE . . . more than 15 amperes higher power than any other car battery . . . can't freeze at sub-zero temperatures.

FULL SIX-YEAR GUARANTEE SAVES YOU UP TO \$90 . . . Average battery lasts 1.4 years at an average cost of \$19.95, or \$85.51 for a six-year period. The . . . battery can be transferred to your new car when you trade.

Most brazen of all promotions to sell mediocre batteries at premium prices was by an operator offering reprints of the *Reader's Digest* article. Advertising material supplied interested persons was purposely confusing. Readers were sure to believe the mail-order battery was an exact copy of long-lived European nickel-cadmium units discussed in the magazine article.

Other advertising referred to the *Digest* article and implied the publication had described the battery advertised. However, the article had no connection whatsoever with any mail-order battery and *Reader's Digest* had not consented to use of its name or trademark in the ads. Playing on the publication's reputation was extremely misleading. But it sold batteries.

Reference to a nickel-cadmium battery and its renowned longevity is completely out of place in advertising mail-order batteries. The word "cadmium" is the common name for a type of battery differing from the conventional battery in two ways: (1) The conventional battery has lead plates while the cadmium has nickel-cadmium or similar plates. (2) The conventional battery uses an acid solution, the cadmium battery an alkaline solution. Reliable authorities say it would be a chemical impossibility to convert a standard lead battery to a cadmium battery. Unfortunately, the word cadmium continues to appear in advertisements many years after publication of the original story.

"DISTRIBUTOR'S OPPORTUNITY," screamed headline-type advertisements by promoters eager-beavering into the market. "The . . . Battery Co. is now appointing dealers and distributors in protected exclusive areas. Written franchises in choice areas are available at no charge. Write, wire or telephone today." All over the United States hopeful businessmen-to-be leaped like hungry fish for a hot frying pan. Why? Because auto batteries are a big business. Automotive statisticians claim 26 million batteries will be sold in 1959. Average battery prices are slightly over \$20, which totals \$500 million this year. Reason enough for distributors to snap at exclusive franchise bait.

What happened next seems incredible. Most of us wouldn't buy a loaf of bread unless we could see it. But dozens of solid citizens paid

premium prices for thousands of dollars worth of mediocre batteries to become distributors of a product they knew nothing about. When the stock arrived each independent distributor worked his area, wholesaling batteries to local service stations and garages. The garages sold batteries to you and me—the ultimate customer. Unfortunately many batteries failed miserably to support fantastic claims made in magazine advertisements. As faulty batteries bounced to local garages they were replaced on the basis of advertised guarantees ranging as long as 10 years. Garages returned them to the distributor who honored the guarantee. When the distributor tried to obtain satisfaction from the manufacturers he usually met continual rebuffs, evasions and complete neglect. As soon as the purported "manufacturer" found a volume of complaints disturbing Better Business Bureaus and postal authorities, he would change his name and begin selling a similar battery all over again under a new name. Revised advertisements would appear seeking new distributors and new salesmen, leaving previous distributors stuck with \$6-10,000 worth of stock they couldn't sell.

MANY DISTRIBUTORS WITH INVENTORIES of Life-Long and other such batteries saw their money go down the drain. The reason? Because it is exceedingly difficult to pursue an out-of-state lawsuit. One distributor in Nevada signed his claim over to an attorney in next-door California. The plaintiff alleged that Jack Morgan Watt and/or Life-Long Battery Co. had repudiated guarantees and that it was impossible to sell the stock of batteries. An important phase of the case concerned laboratory tests made by a competent laboratory—but said to have been "doctored." A technician from the testing laboratory testified to changes in the original report, which tend to make it appear that Life-Long was a superior battery. At request of the former distributor's attorney considerable information was supplied by the Better Business Bureau. Happy ending: the plaintiff was awarded \$1791 damages, \$500 attorney fees, and court costs. Legal advisors reported to the B.B.B. that there was no question but what misrepresentation and fraud had been proved. It appeared to have been made clear there was intent to misrepresent and defraud the plaintiff, who won the case.

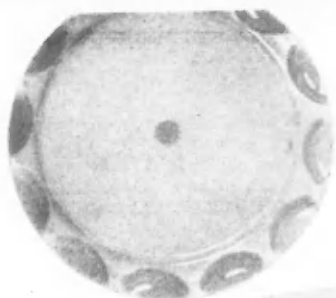
Not so lucky were other distributors caught in the web of battery swindles. One man lost his life savings, his wife, children and reputation. Today he finds it impossible to return to the town where he lived since birth—one result of being in the middle when the "manufacturer" repudiated guarantees. Another man, now a fugitive from justice, got so deep in debt he began passing "rubber" checks to support himself. He had lost every cent in a distributorship. Even international relations came into the act when a reputable business man in a foreign country imported some \$10,000 worth of mail-order batteries. After running the gauntlet of accepting returns and making good before finding the "manufacturer" had a new name, he wrote to a Better Business Bureau near the battery company's office. But the B.B.B. could do nothing, as the foreign business man failed to cooperate in vain hopes he would get some of his money back by writing peaceful letters to the battery people. At last reports the State Department was interested in finding a way to right this upset to friendly relations with an important country.

THE FEDERAL TRADE COMMISSION, long a leader in policing business practices, has its hands tied until investigations are made, a complaint issued and hearing completed. The tangled threads of one such "police action" came to light on November 2, 1956. Under Docket No. 6675 the F.T.C. filed a complaint against the Life-Long Battery Manufacturing Co. of California.

Here's what the complaint said: "In course and conduct of said business, and for the purpose of inducing purchase of their products, respondents (Life-Long Battery Corp.) made numerous representations, statements and claims concerning said product in various forms of advertising circulated and distributed throughout the United States and Dominion of Canada, and in advertising material furnished their dealers and distributors.

"Among and typical, but not all-inclusive of such representations, statements and claims are the following: That 'Life-Long' batteries are self-recharging, contain cadmium alloy grids and silver nuclear cells, are a European invention, are similar to nickel-cadmium or alkaline type batteries manufactured and sold in Europe, and are guaranteed for 10 years with free replacement or refund of purchase price during said period. That testimonials in Life-Long advertising were unsolicited and unbiased. That the batteries are manufactured by Life-Long Battery Manufacturing Corp. Use of the word 'Manufacturing' as part of the name of the respondent serves as further representation that the batteries advertised and sold are manufactured by said corporation."

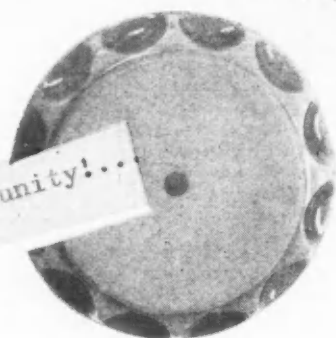
continued



Good for more than 500,000 starts...

Perfect operation in all weather...

Distributor's opportunity!...



continued

THE F.T.C. COMPLAINT CONTINUED. "The aforesaid representations, statements and claims are false, misleading and deceptive. In truth and in fact: Respondents' Life-Long batteries are not self-recharging, do not contain cadmium alloy grids and contain neither silver nor nuclear cells, are not a European invention, are not similar to nickel-cadmium batteries or alkaline type batteries that may be manufactured and sold in Europe but, on the contrary, are the lead-acid type of battery manufactured and commonly used in the United States, and are not guaranteed for 10 years with free replacement or refund of the purchase price within such period. The guarantee given by respondents provides for free replacement or repair of failed batteries, at option of respondents, only within one year from date of sale. Thereafter, adjustments are made upon a pro-rated basis. The guarantee is further limited to one-third for batteries used in truck, bus service, commercial use such as taxicabs, salesmen's cars and diesel service. Certain testimonials included in respondent's advertising were solicited and biased. The batteries sold by respondents are not manufactured by respondent Life-Long Battery Manufacturing Corp., but are purchased from the manufacturers thereof."

SEVEN MONTHS LATER, on May 23, 1957, the F.T.C. issued a Decision of the Commission which said, "The agreement is for settlement purposes only and does not constitute an admission by Life-Long that they have violated the law as alleged in the complaint." Behind this haze of legal phrasing the company then agreed to cease and desist from representing directly or by implication: "That their battery is self-recharging, contains silver or nuclear cells or any other kind of grids or cells not in accordance with the facts, represents a European invention or is similar in construction, performance and effect to nickel-cadmium or alkaline type batteries manufactured and sold in Europe or elsewhere, that their battery is guaranteed for 10 years or for any period of time or in any manner, unless terms and conditions included in the guarantee under which said product is sold are clearly and fully set forth, and that testimonials are unsolicited and unbiased when such is not the fact." In other words, they promised to stop misrepresenting their product.

As if this weren't enough, a month later Life-Long represented by Jack Watt appeared in the U.S. District Court in Los Angeles and consented to a judgment in favor of the General Electric Co. of Schenectady, N.Y. Why? Because Mr. Watt had been manufacturing batteries using "General Electric" and the initials "GE" as a trade mark. Watt, as Life-Long, had been selling these "GE" units throughout the United States in 1954 and 1955. General Electric sued in 1956 and won on the basis of infringement of trademark. The judgment provided a fine of \$7000 and ordered Life-Long to surrender all advertising material, battery plaques and other items bearing GE's name or initials. Life-Long surrendered the listed items, shipped their remaining stock of "GE" batteries to Japan and started selling them there. When GE heard of the overseas sales they hauled Life-Long back into court a month after the F.T.C. agreement was signed.

IN EARLY 1957 A NEW FRAUD hit the market. This one is the so-called "waterless" battery. In one man's opinion, "The most complete battery fraud ever perpetrated on the public." Full-page advertisements ap-

pearing in national magazines have already flooded Better Business Bureaus with requests for information on "distributorship" deals—and flooded the advertiser with orders. Is this another promotion of a mediocre battery at a premium price?

Here's what the Los Angeles B.B.B. had to say in late 1958:

"Jack Morgan Watt, long known to the B.B.B. for various operations in the automotive field . . . is or has been connected with a number of dubious activities. Some of his promotions, headquartered in Los Angeles, included General Electric Storage Battery Co., Life-Long Battery Corp., Life-Long Spark Plug Corp., Micro-Bronze Filter Corp., Silver Lifetime Battery Co., Carparts Corp. and Reactor Drain Plug Corp.

"A flood of wires and phone calls has deluged the B.B.B. as a result of what appears to be Watt's newest operation—the Waterless Battery Corp. which uses the address 1234 North La Brea. Callers . . . are referred to the address used in most Watt deals, 140 Kansas Street, El Segundo [More recently, 1500 Franklin Avenue, El Segundo—Ed.]


"Each of Watt's promotions has resulted in complaints . . . from competitive companies, from distributors of his products and from unhappy users. The G.E. Lifetime Battery which was offered in national magazines . . . resulted in a lawsuit by the General Electric Company.

"The Life-Long Battery promotion resulted in an F.T.C. suit charging false advertising. Among claims made in national magazine space were a 10-year bonded guarantee, self-recharging, successful testing at -70° F and implications that the battery was similar and superior to the nickel-cadmium battery manufactured in Europe. The Life-Long Battery case carried the inscription 'Silver Nuclear Cells.' Watt admitted under oath in recent hearings that the battery contains only the silver inherent in lead deposits.

"The Waterless Battery Corp. was advertising widely in national magazines. The California Secretary of State's office advises us that this company is not on record despite the company's franchise agreement which states, 'The Waterless Battery Corp. is a corporation organized and existing under and by virtue of the laws of the State of California.'

"Claims for the Waterless Battery included . . . never needs water, starts at -70° F, completely sealed at the factory, tamper-proof, operates in broiling hot desert temperatures and is non-evaporative. The battery has been advertised variously at \$34.95 and 'as low as \$19.95.' Ads on the \$34.95 battery carry a four-year guarantee and state, 'It is a known fact that liquids such as mercury do not evaporate or freeze. The new Waterless Battery was developed from this basic premise.' The B.B.B. is informed that this statement does not represent true scientific facts.

"Some ads offered a five-year guarantee: 'Backed by the manufacturers and bonded by a state charted bonding company.' The bonding company referred to is Ardmore Investment Co. of Los Angeles, whose president is Edward S. Kellogg, head of Watt's advertising agency. The Secretary of State's office advises that Ardmore Investment Co. was suspended early this year for failure to pay franchise or license taxes. Ads also refer to Bell Telephone Co.'s invention of the famous silicon solar battery, stating this led to the discovery



Another amazing battery development...

of the Silicon Waterless Battery. Bell Telephone laboratories informs the B.B.B. that they have consulted members of their technical staff, including storage battery specialists and they have never heard of any device which fits the description in the advertisement.

"In past promotions, these companies have often advertised for distributors. Many complaints come from individuals whose 'exclusive franchises' were far from exclusive and who found their dealings with the companies unsatisfactory. Complaints also have come from persons alleging battery failures, and negligence on the part of the company to reply to correspondence and offer adjustment as pledged under advertised guarantees.

"In addition, Waterless Battery distributes a 'Summary of Report to Waterless Battery Corp.' signed by a reputable laboratory. The laboratory states the report on Waterless is completely fabricated. They did a report on Watt's Life-Long Battery and excerpts from this report are included in the material being distributed as a report on the Waterless Battery. The seal, signature and name of the laboratory have been photostated from the title page of the Life-Long report, and other sentences have been inserted by someone else. An earlier report on Life-Long, according to a statement by laboratory officials, was not presented in its entirety and was edited leaving certain misleading impressions."

MOTOR TREND CALLED THE LABORATORY which provided the original report that Mr. Watt is alleged to have "doctored," and a spokesman told us, "When a client comes in and asks for a test to be made in a certain manner, we make the tests as the client directs, doing everything the client asks us to do—and nothing more. Then we make a report of the findings. There is no evaluation of the product. Nor do we state that a thing is good or bad. The fact that we are occasionally not allowed to buy batteries on the open market, and that comparative standard batteries are often the least expensive units that could be found, tends to cloud the value of advertised reports."

The next step by Mr. Watt was taken in July of 1958 when national advertisements appeared for a "Dri-Cell" Battery, said to never require water. **MOTOR TREND** decided to check the battery before accepting advertising, because it, like the "Waterless" Battery, was supposed to contain silicon. Here's what happened.

MOTOR TREND sent the sample battery to a reputable laboratory for analysis of the electrolyte and identification of plate metal. Technicians removed an end cell from the battery. The acid was poured from the cell cavity, disclosing a thick jelly-like layer in the bottom. The plates were examined and found to be conventional lead plates. The clear acid was reserved for analysis, while the jelly and remaining acid were flushed from the plates and cell cavity with distilled water. The jelly was separated and washed by centrifuging with washings added to the acid rinsings. Strength of the battery acid and total amount of sulphuric acid was then determined. Flame tests indicated the presence of sodium in the acid electrolyte, which was determined by precipitation as sodium uranyl zinc acetate. The jelly-like material in the battery was found to be silica. It compacted to a volume of approximately 320 milliliters, or about one-half the volume of acid. Accurate determination of total silica was found to be impractical because of excessive contamination with lead oxide and lead sulphate.

Results of the analysis indicated the following material in the cells: Sulphuric acid, 8.56 Normal, Specific Gravity 1.2483, volume 603 milliliters, weight 750 grams; Sulphuric Acid as H_2SO_4 , 32.8 per cent by weight; Water 64.8 per cent; Sodium Sulfate, weight 6.4 grams, 0.8 per cent; and silica 1.6 per cent (containing lead oxide and lead sulfate).

Said the laboratory, "In our opinion the silica jelly was produced by addition of a solution of sulphuric acid to a solution of sodium silicate. The effective electrolyte is a sulphuric acid solution containing a small amount of sodium sulfate. There was no evidence of a silicon in the electrolyte. Descriptive literature supplied with the

battery stated the battery was sealed. Friction plugs closing the cells were found to have breather ports."

"Is material found inside the Dri-Cell battery really different?" Not according to technical data from the Association of American Battery Mfrs. which shows it to be similar to sulphuric acid solutions found in most lead-acid batteries. Except "Dri-Cell's" is thick—instead of thin.

Waterless type batteries are nothing new as shown by this A.A.B.M. statement: "Special Construction: Some types of batteries are constructed with . . . over three times the usual water reserve above the separators . . . the same quantity of sulphuric acid is used in these batteries as is used in batteries with equivalent size elements . . . extra water volume requires the battery to be re-watered about one-third as often as conventional units."

OTHER AND NEWER BATTERIES are hitting the market this year in a burst of promotional advertising designed to take advantage of what the F.T.C. calls, ". . . a preference on the part of dealers and purchasing public to buy products, including batteries, direct from manufacturers in the belief that advantages such as better prices are thereby afforded them." The kicker is that in nearly every case brought to attention of the Federal Trade Commission, the so-called "manufacturer" has its batteries built elsewhere. Many concerns specialize in production of private brand batteries, built to specifications of the purchaser. These are often made to a price, rather than to standards of quality used by such reputable brands as Exide, Auto-Lite, Willard, etc.

Which brings up a good point. If the mail-order battery companies are poor people to do business with, how good are their expensive batteries? We'd say, "Pretty awful." One of the latest, billed as an "Extra Heavy Duty" unit, selling for over \$30, can hardly be told from a chain store battery at \$14.95. The wholesale price of the "Extra Heavy Duty" job is \$16.95. The promoter could buy his batteries from retail outlets (for \$14.95) and sell them wholesale (for \$16.95) and still make \$2 on each one. How silly can business be?

Such a fantastic collection of questionable acts should have a humorous side. Reputable Electric Storage Battery Company (Exide) took space in trade papers to poke fun at claims made by mail-order "manufacturers." One such Exide advertisement carried a half-page picture of "Another Amazing Battery Development. The 'Donut' battery, the all-around battery, with the hole. It lasts forever because it never ends, eliminates end cell failure because there are no end cells, holds its charge because the current can't get away, cranks faster because the amperes go around and around, is easy to service (start at the beginning and keep going) and the center provides a handy storage space for sandwiches." The rest of the advertisement warned readers this was all in fun. No such battery was going to be made nor should car designers get any ideas. Effect of the picture was to remind tradesmen that batteries are batteries, and incredible claims frequently go astray.

PERHAPS THE BEST WAY to avoid being stuck when buying a battery for your car is to consider that every maker of a reputable product is not slow to brag of the quality built into his product. Battery cases list the number of plates, 20-hour rating in ampere hours, and the 300-ampere rating at zero degrees Fahrenheit. The latter reading is a measurement of battery power for cold starts. Perhaps the easiest yardstick for most of us is weight. The heaviest battery, with the most plates and highest numerical ratings, is the best battery. Keep in mind that if this information is not available, it is likely the manufacturer is not proud of his product's quality.

Beware of wild advertising claims, guarantees of improbable life duration, high prices for a product that will "never wear out" and over-eager salesmen shooting for \$8 to \$16 profit on the sale of their shoddy black box. Buy the reputation of the maker and you'll seldom pay the penalty of a dead battery. Or, own a garage-full of thousands of dollars' worth of returned batteries and a franchise not worth the paper it's printed on. /MT

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CLASSICOMMENTS

by Robert J. Gottlieb Classic Car Editor

A CLASSIC IN ANY FIELD is that which is best—something that continues to live on in the thoughts of man because it was the finest example of a given product. There are classics in every field of art. To those interested in the history and construction of frying pans, there are undoubtedly frying pans which would be considered classics.

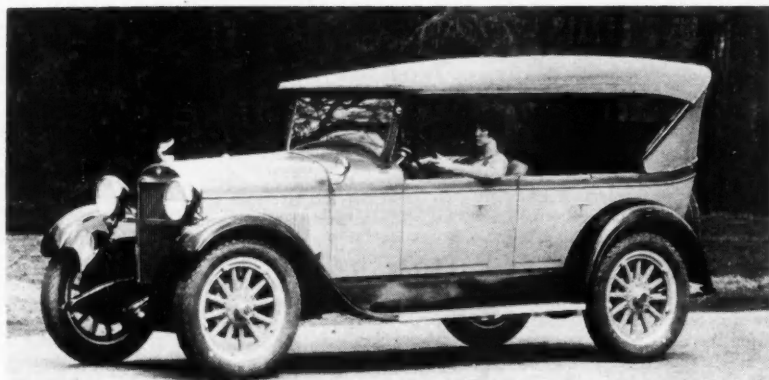
What makes a given product better than any other? Whether it is designed well or constructed of superior material by superior craftsmen is a matter of opinion. Art lovers collect oil paintings which go up and down in value depending upon the opinions of other art collectors. If every art collector considers a given picture worth \$1 million it will be worth \$1 million to an art collector who wants it and has that kind of money. If a dozen collectors value a portrait at \$30, while another dozen value it at \$2000, the sale price will be somewhere in between the minimum and maximum figures.

These simple laws of economics apply to classic automobiles. They are valued at an average figure, taking into consideration, of course, conditions of a specific machine. There is something more important, however, and it involves the definition of a classic.

We have defined a classic many times in the past. Other organizations and writers have also attempted workable definitions for a classic. You can take any definition and you

will find such words as "powerful . . . prestige . . . luxury . . . dependability . . . superior craftsmanship . . . finest materials . . ." etc. Regardless of how you mix them up, any of these words are qualified by personal opinion. One enthusiast may think a given car is constructed of the finest materials, while another thinks it is not. From a design standpoint, one collector may think a design is outstanding, while another believes it to be primitive. As long as personal opinion enters the field we will have continual disputes on whether or not a given car is a classic. If the opinion of the majority is controlling (and it always is), borderline cases may be classic one year and non-classic another year, depending on the thinking of a constantly-changing majority.

Perhaps the best example would be the Essex. During the early and mid-'30s the Essex was known as a well-built, dependable, and exceedingly fast machine. It was eagerly sought by hot-rodders of the period. It was extolled as an exceptionally fine machine—and it was. A majority of those interested in automobiles thought of the Essex as a classic during the mid-'30s, even though it was far from an expensive marque. The passage of years and the elevation of other marques in the minds of enthusiasts have relegated the Essex to the status of special interest. There are few enthusiasts today who



This '28 Essex phaeton, revered as classic in '30s, slipped from favor, is now "special interest."



Lincoln Continental ('40 model above) seems to be losing some classic prestige long enjoyed.

will claim that it achieves the status of a true classic.

The converse is also true. Cars which were looked upon as average, or only slightly above average, at the time they were built are now revered possessions in the hands of classic car enthusiasts.

The Lincoln Continental has been the subject of dispute for many years. It is best described as a borderline case. From 1952 through 1957 the car grew in popularity until a point was reached where the Continental was considered a classic. Owners pointed with pride to the long, low, flowing lines, construction, and luxury. Those opposed argued vehemently that the 12-cylinder engine was undependable, that the car was poorly constructed, and that it was nothing more than an overgrown Ford. The majority view prevailed and due to the sheer weight of numbers the Continental was proclaimed "the last of the American classics."

Ever since the beginning of 1958, the Lincoln Continental has lost favor with the majority of classic enthusiasts. We need not give all the reasons; suffice it to say that a majority no longer regard the automobile as an example of a true classic. We can't say that the majority is right or wrong. We can only point out that the change in opinion is reflected in the demand, which in turn is reflected by lower prices.

This situation could happen in any field. If all the members of succeeding generations determined that Whistler's "Mother" was poorly painted, it would lose its value and also its status as a classic. In the field of music our most popular and successful operas, the classics of their field, were anything but popular when first played. Wagner and Verdi had not only financial difficulties at the time they were producing their masterpieces, but were disheartened at the criticism of their works when first produced.

We knew that the members of the Lincoln Continental Owners Club would be unhappy when we mentioned in past issues the apparent decline of the Lincoln Continental. Some Continental owners are vehement in their disapproval, but they are in a minority. We call the shots as we see them and out of respect for Continental owners we sincerely hope that opinion, like the stock market, will rise in the immediate future.

Floyd Clymer has started a new club called WORLDWIDE OLD CAR CLUB "To provide an association which will work for the enthusiast interested in old cars . . ." With the payment of \$10 in dues you get a subscription to the monthly Automobile Topics, a small pocket secretary, decals, a label pin, and 20 per cent discount on any books published by Floyd Clymer.

A New York reader complains that the ride on his '37 Packard is too soft. All Packards built during the classic era had soft suspension designed to give a smooth ride. This was fine for the large limousines but was troublesome with sport models. Make sure that correct size tires are installed and use six- instead of eight-ply tires. Shock absorbers should be carefully checked. Finally, spring arch disappears with age, leaving the springs in a flattened position, making the ride harsh. The springs should be re-arched or replaced.

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Colorado Street, Pasadena, Calif.

CANADA
British Motors Limited,
2709 Yonge St., Toronto, Ontario

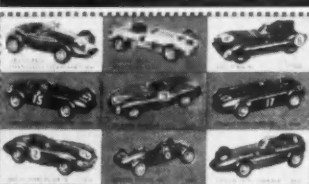
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AROUND THE WORLD

continued from page 19

is started. A tiny Abarth-Fiat 500 toured Monza for 10 days and set 17 international records, five of which had never been attempted with an engine of less than 500cc. Front of the car was damaged by wild game which continually crossed the track but worst of all was rain and fog which forced termination of the run on October 7th. Ten-day average was 72.2 mph, remarkable for this size car, even with a streamlined body. On October 25, Abarth-Fiat ran their 750cc twin-overhead camshaft engine, breaking five records in two hours. Their 200-mile average was 128.2 mph and at 500 kilometers (310 miles) the speed had dropped less than one mph... The Turin Motor Show was a fresh indication that the European auto industry is developing in a healthy fashion. A common market agreement commits Benelux, France, Germany and Italy to reduced tariff barriers. One result is Alfa Romeo's plans to assemble the Renault Dauphine in Italy. Production is expected to reach 2000 per month by spring with price competitive to the Fiat 1100. This will disturb Fiat which has held a near monopoly on the Italian small car market. They have already reacted by cutting prices. Fiat 500 has been cut \$112 to \$627, and \$24 has been knocked off the Fiat 1100. Volkswagen cut their Italian delivered prices by nearly 14 per cent, and Porsches were also reduced. Italian motorists aren't complaining. With taxes on cars and fuel up they need all the help they can get... Fiat rushed a new car to the Turin show. On a 1200 chassis, it sports a 1500cc twin-overhead cam engine based on an Osca design. Farina built the body in a record four days. Appearance of the car is a hint that Fiat may be planning a serious entry into the sportscar market... Lancia is under new management. Demonstrating their versatility, they displayed three new versions of V6 Flaminia at Turin—coupes by Farina, Touring and Zagato on 99- and 108-inch wheelbases. Zagato also turned out a competition coupe body for the Lancia Appia chassis. Top speed is 93 mph from a 53-hp engine and in racing trim the car has touched 110 mph... The Alfa Romeo Sprint Speciale streamlined coupe by Bertone is now in production. It has a slightly shorter tail and more headroom than last year's prototype and a fairly standard Super Sprint Giulietta engine. Weight has been increased some 130 pounds by using steel instead of aluminum panels... The Moretti stand at Turin carried a new overhead camshaft 750cc roadster giving 35 horsepower. Car is for the U.S. market... Siata displayed a prototype convertible. Engine is derived from the 1400 Fiat with stroke lengthened so that displacement is 1700cc. Speed is said to be 100 mph... Italian coachbuilders are definitely at the peak of their influence in world car design as shown by the Paris, London and Turin shows. Some designs even go behind the Iron Curtain. Ghia is building prototypes for the Polish Warszawa. They also have contracts with Chrysler, Volkswagen and Renault. Pinin Farina works for the British Motor Corp., Peugeot, Fiat, Lancia, and Alfa, and is building Cadillac's Eldorado Brougham bodies in a special section of his plant. Carrozzeria Touring is building a

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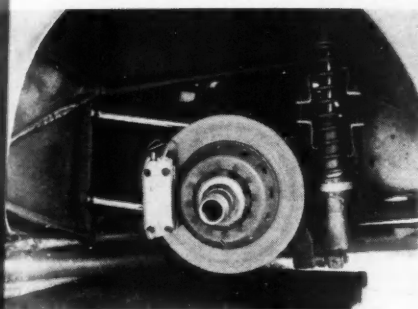
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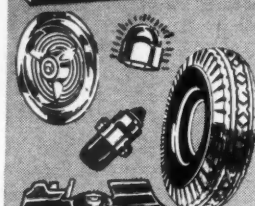
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new Lagonda sedan plus doing work for Aston Martin, Maserati, Lancia and Alfa. Vignale has been turning out Standard and Triumph prototypes to Michelotti's designs; Bertone styles for Alfa while Zagato works for both Lancia and Abarth. Fissore restyled an Auto-Union 1000 sports coupe and Frua built a smart coupe on a Lloyd 600 chassis. There is scarcely a car manufactured that doesn't bear some direct or indirect mark of the Italian stylist . . . Enzo Ferrari's *Cavallino Rampante* (Prancing Horse) is the spectacular defender of the Italian motoring tradition. The cars reflect the vigor and strength of the man behind them which makes his opinions important to the country's auto industry. He expects no changes in his 250 Gran Turismo coupe and who can blame him. The car's success speaks for itself. In sportscars, he will concentrate on a two-liter V6 with two overhead camshafts, a model which should give about 200 bhp on gasoline and be suitable for private owners. Chassis of this car is a lattice-type construction of lightweight tubes; rear axle is de Dion and suspension is by coil springs incorporating tubular shocks. Dunlop disc brakes are fitted and there is a five-speed synchro gearbox. Body is compact, streamlined and comfortable. Ferrari says it is a car for enthusiasts who are anxious to have at their disposal a powerful machine which is not impossible to drive and maintain. For factory team racing this year, Ferrari will use his famous three-liter V-12, an engine similar to that of the car which won the Manufacturers Championship last year. He has expended a great deal of research on chassis development to make it lighter and more rigid. Suspension in this case will be coils with tubular shock absorbers. Disc



Ferrari is now fitting disc brakes, suspension by coil springs and tube shocks to race cars.

brakes and five-speed gearbox complete the layout. He will keep in reserve his three-liter V6 and the four-overhead-cam engine. For the Grand Prix season he will continue improving his very efficient Dino V6 for Formula II. The Formula I standard bearer will be the 2½-liter V6 which now delivers 318 horsepower at 9500 rpm. Chassis, of small diameter tubes, and coil spring suspension will be similar to the sportscars. Five-speed gearbox will have no direct ratio. Fuel injection will not be used, at least not yet. Ferrari is carrying out a research program with a large Italian carburetor manufacturer but results have been inconclusive. The Ferrari factory is being constantly expanded for increased production while exciting new prototypes are secretly being tested. Ferrari aims to stay a full jump ahead of the ever-present competition. /MT



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Photo Story by V. Lee Oertle

MOST CAR OWNERS consider their mechanic's tools second in importance to the car itself—helpers that are respected only in emergencies. Whereas auto bodies and engines are usually maintained in good condition, the tools that can help keep them that way are often neglected, left lying in a moist tool chest, or kicked aside on the garage floor.

A few minutes spent collecting these valuable assets, then another hour set aside to salvage the most seriously rusted pieces, will pay dividends. An electric wire buffer, canned rust solvent, and emery paper will remove most anything that afflicts the iron. Protective coatings applied directly to tools, immediately after the de-rusting operations, will prolong tool life by many years.



A power buffing wheel is the easiest way to remove scale from badly rusted tools; a wire brush for lesser problems. Go to bare metal.



Good commercial rust solvent will often free rust-seized tools that kerosene won't soften. Soak tools overnight, wire-brush off scale.



After de-rusting tools, apply a good rust-proofing agent. If surface is clean, clear acrylic plastic spray will last for many months.



Want a rubberized grip on tool handles? Dip them in liquid neoprene, let dry overnight. For thicker insulation use several coats.



If no tool box is available, wrap equipment in oilcloth and store in dry place. Don't leave loose in normally damp trunk compartment.

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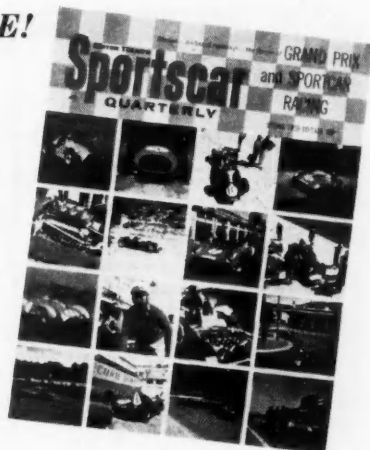
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GOOD FORTUNE FROM DARK GREEN — The complete story of Britain's Vanwall Grand Prix car — its triumphs and its failures. How it became the most successful race car of 1958. What does the future hold?

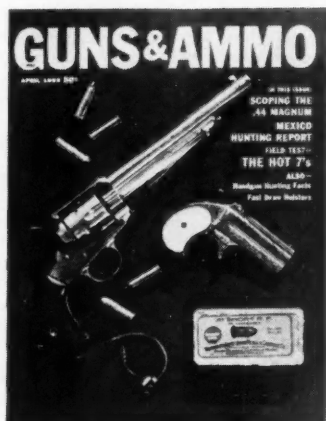
THE ULTIMATE RACING STABLE — Artist Ron Simmons pictures his ideas of a complete group of race cars, including Formulas I, II and III; over- and under-1500 cc sports-race cars; a probable winner at Indy and Monza; a world land speed record car and a new concept for stock car racing.

WORLD'S CHAMPION DRIVER — Mike Hawthorn, who did the seemingly impossible; took the 1958 Grand Prix Championship to England by winning only one race.

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handy hints

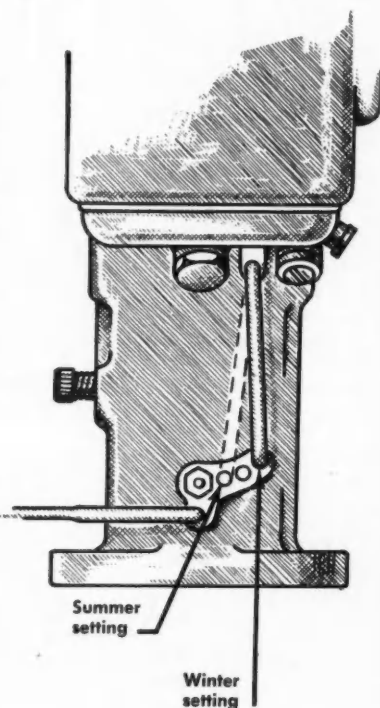
by Rodger Darling

LAZY MAN'S THERMOSTAT TEST—If you suspect thermostat trouble (engine slow to warm up, reluctant heater, etc.), you can give it a rough check without opening up the cooling system. Just feel the top of the radiator and the cylinder head as the thoroughly cold engine warms up. If the radiator heats up almost as fast as the block, the thermostat isn't closed all the way and needs replacing.

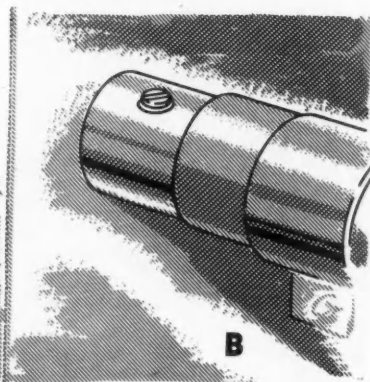
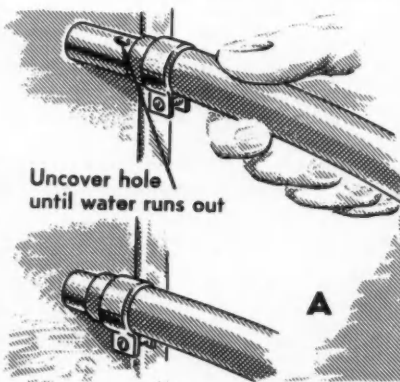
HOW HOT IS "HOT"?—When your car is very well warmed up, immerse a cooking thermometer (they read about 100 to 250°) in the radiator water. Whatever reading you get, ink it on a small adhesive tape "pointer" which you have carefully affixed to the dashboard *exactly* in line with the present position of the temperature gauge hand. You will then have a much more meaningful heat guide than the vague "C" and "H" of the usual TEMP gauge (often not installed too accurately), and a *real* temperature reading to warn of overheating (especially valuable to users of alcohol-type anti-freeze).

HEAT MUST MOVE—If your heater isn't throwing enough heat, check it for circulation of **WATER**—Feel heater fittings where they connect to hoses; if both fittings are not about the same heat as the upper engine fitting, there may be an obstruction, such as an overlooked shut-off or faulty control valve; clogged hose or heater core; or air trapped in too-high curve of heater hose. Also check for circulation of **AIR**—Make sure heater fan runs . . . listen for it. Determine if air ducts and dampers are working right; a cigarette held in front of air intake will give you a smoke-check on the operation of these valves.

WINTER CARBURETOR ADJUSTMENT—Your car owner's manual (suspecting you of having 10 thumbs) may not mention it, but many carburetors have a simple adjustment for better winter and summer performance. The accelerator-pump link will have two or three



holes (sketch shows typical setup). In winter, positioning the pump arm in the hole *farthest from the center* gives the pump a longer stroke, injecting extra gas for stronger acceleration when cold weather makes the engine less peppy.



NOT HOT?—Does your car heater often become "air-bound" (hot water circulation blocked by air trapped in heater when coolant level falls)? You can get rid of that air block easily if you have made one of these "vents." **A**—Pull upper heater hose back and

drill 1/16-inch hole through top of pipe. Slide hose forward to cover hole. Then, to release trapped air, just hold hose back until water appears at hole. **B**—Or, drill small hole in exposed top of upper pipe and insert a self-threading screw with a rubber washer.

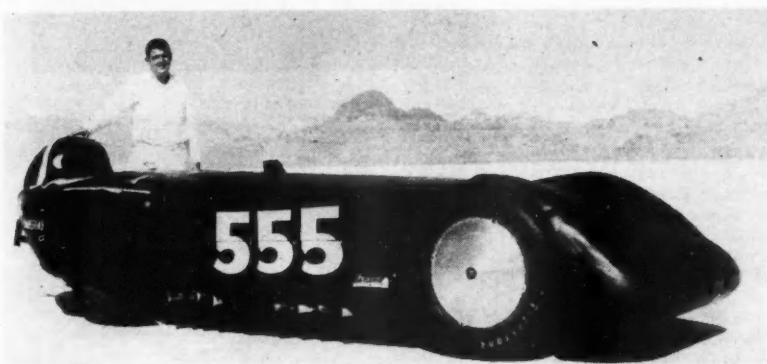
300 mph on the Salt

continued from page 34

levels and then flipped the magneto switch to ON. The engine burst into life and I immediately accelerated away from the truck.

The tachometer needle climbed quickly to 3500 revolutions per minute and by the time I let in the clutch for the front engine, opened its fuel valve and flipped its magneto switch to ON, I had reached 160 miles per hour. One mile from the starting line I shifted the rear engine into high gear and watched the tachometer needles climb. The noise inside the car became deafening as 800 horsepower roared inside the aluminum shell and the gears in both differentials began to scream their high-pitched cry of helpless torture.

I WATCHED THE TACHOMETER needles climb steadily past 225 miles per hour, past 230 and then cross the 250 mark. I grew a bit tense as I looked both right and left to study the tops of the rear tires. For four days I had been having trouble at about 240 miles per hour.



Mickey Thompson, fastest American driver in history, poses alongside car he built and drove.

The tread rubber had been literally ripped off the rear tires by the combined destructive forces of centrifugal-peripheral speed and the car's high rate of acceleration. Each time that happened I had been forced to shut off the power and ride the vibrating, bouncing machine to a halt; and as it took from five to six miles to stop a car travelling in excess of 240 miles per hour, some of the rides had been rather exhaustingly fatiguing. The final solution to our tire problems, or rather what we hoped would prove to be the final solution, was found in the installation of larger tires at the rear of the car, even though it had meant cutting holes in our well designed streamlined body shell to allow the larger tires to protrude through the top. The tops of the two new tires, less than two feet from my eyes, seemed to protrude even further out of the body as the centrifugal force caused them to stretch out of shape, in spite of their 110 pounds inflation pressure.

I watched the rear tires for another split second and then turned my attention back to the black guiding line in the center of the course. Anyway, there was not much I

could do about the tires; if they were going to come apart there was nothing I could do to stop them.

THE TACHOMETER NEEDLES climbed steadily as I approached the first set of timing lights, two miles from the starting line. I crossed between the lights and the tachometers showed a speed of approximately 270 miles per hour. Both engines were pulling hard and in less than 13 seconds I had screamed through the first timed mile. As I crossed between the next set of lights the car continued to accelerate. At that point I was doing better than 280 miles per hour. I could feel all 800 horsepower flowing through the chassis, driving the differential gears into successively higher screaming tones.

Halfway through the second timed mile I took one last look at the two rear tires, for in the next mile and a half I had to concentrate on the black guiding line in the center of the course and on the instrument panel. The tires seemed in good shape,

although the treads seemed to be a bit more pointed at this speed and I also noticed a thin white spray leaving the top of each tire—a sign that the hot summer sun had drawn the water to the surface and the salt was getting wet. Similar streams of wet salt spray streaked back from the tops of the two front tires.

Approaching the end of the second mile the tachometers reached 290 miles per hour and the needles were still climbing. The car seemed to be guiding itself along the black line and even though I was a bit tense, waiting and hoping the tires would hold up, my hands rested only lightly on the wheel. To grip the wheel tightly would be bad, for at this speed the car was a projectile, driven and aimed by its own engineered capabilities. If it deviated from its true course I could only make light, easy corrections; to turn quickly would be fatal.

THE TIMING LIGHTS at the beginning of the third and last mile sped toward me and as I crossed between them the tachometer needles were but two tiny marks below 300 miles per hour. I coaxed, I begged and per-

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REUPHOLSTER with a BRUSH!



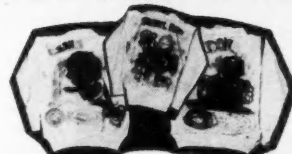
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Photo Story by V. Lee Oertle



ALUMINUM PLASTIC

Only one of the amazing recent developments in plastics, Duro's Plastic Aluminum has valuable applications to auto upkeep. Unaffected by gasoline, oil or water, it will withstand temperatures up to 600° F. Shown here are two common uses for the product. At left, rusted muffler seams can be repaired by wire brushing, then forcing Plastic Aluminum into seams. Deep cracks may require several layers. An emergency gas tank repair, right, requires paint to be sanded off, area wiped dry temporarily, and aluminum spread on for effective sealing.



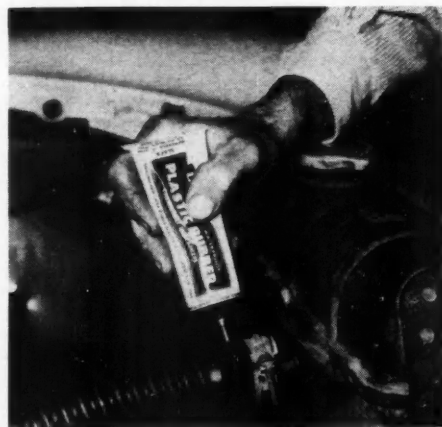
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RUBBER PLASTIC

Actually rubber in a tube, Plastic Rubber dries on contact with air to a tough, resilient, waterproof surface ideal for convertible tops, sealing door and window molding, repairing insulation and various adhesive purposes. When electrical insulation cracks off on auto wiring, left, spot repair it with Plastic Rubber. Worn terminal rubber clips can be touched up the same way. It is also handy for filling rubber cracks in battery cases and on cables. A leaky radiator hose, right, will take the product if the surface is clean before application.



300 mph on the Salt

continued from page 71

haps even cursed them for not climbing faster. A quick look at the temperature gauges showed the engines were not overheating but when I looked at the oil pressure gauges my heart sank. The needle on the gauge for the front engine was dropping. Either the bearings were going out or a main bearing cap had broken. I had to back off the throttle or blow up the engine. The tachometers crossed the 300-mile-per-hour mark and I almost cried as I eased up on the throttle. I had been there, I had reached 300, but I could not make it through the balance of the mile at that speed. I throttled back until the needle on the oil pressure gauge ceased to drop and then watched the marker at the end of the mile approach. That engine just had to stay together for I had to make a return run from the opposite direction.

I sailed between the lights a little under 290 miles per hour and in less than three seconds had thrown in both clutches, turned off the master fuel valve and killed both magnetos. Both engines died immediately, the gears became quiet and I began the long process of slowing down. For three miles I coasted and finally the end of the black line and the phone man, standing there, came into view. I coasted quietly by him at a relatively slow 100 miles per hour and then began to apply the brakes. In another mile I brought the machine to a stop.

I CLIMBED OUT OF THE CAR and once again was appalled by the absolute silence that existed on the wide expanse of salt flats. There were no sounds other than those made by the car and myself. The cooling exhaust pipes seemed to be popping like corn in a popper and in a few minutes, when the car finally became quiet, I was again conscious of that thump . . . thump . . . thump—the sound of my heart beating, as if it were an external noise, not something inside me.

I walked slowly around and around the car, my feet noisily crunching on the damp salt, and after a few minutes heard the sound of our truck speeding across the salt toward me.

Fritz Voigt, who had built and maintained the engines in my car, Cecil Schremp, my teen-age California neighbor who had helped with the construction of the car, and my wife, Judy, climbed from the truck. On the way down they had stopped at the timing stand and discovered that my official, average speed for that last mile had been 294.117 miles per hour, not as high as I had hoped for but still faster than any other American driver or car had ever travelled. I was still determined to hit 300, however, and when I told Fritz about the oil pressure he suggested I make a longer run going back, using the rear engine only while accelerating and then cutting in the front engine when it was needed.

THE PHONE MAN from the nine-mile post drove down to tell us the course was clear. I climbed back into the car and we pushed another mile down the salt, turning around

at a point that would afford us fully two more miles of acceleration than on the prior run. The starting procedure was the same as before and in a few minutes I found myself under power. The only disadvantage in starting so far back was that there was no black line out there. One had to more or less aim in the right direction and then sight just to the right of the phone man at the nine-mile post when he came into view. I was very fortunate, however, and came onto the course not more than ten feet from the center line. My speed at that point was about 190 miles per hour and the rate of acceleration, using one engine only, seemed rather slow. I continued on one engine for another mile and the speed went up slowly to about 225 miles per hour. With three miles of accelerating room left I engaged the front engine, opened its fuel valve and hit the switch.

It fired immediately and the car began to accelerate rather rapidly. The oil pressure never came up to proper level but both engines pulled steadily. The tachometers climbed past 270, 280 and then past 290 miles per hour and I still had almost a mile to go before entering the timed mile. The two engines sang their song of power and the gears again screamed their tortured wail. I smiled as the tachometer needles continued to climb. At that rate I would be well over 300 even before I entered the mile. The thrill of speed and achievement ran all through me. "Today," I thought, "I am driving faster than anyone on this continent has ever driven; and some day, if all goes well, I'll bring the World's Land Speed Record back to this country. But today, all I ask of my fatigued machine and worn engines . . . is 300 miles per hour."

Then, suddenly, my day-dreaming was brought to an abrupt end; the oil pressure gauge for the front engine dropped to 0. The front engine tore itself to pieces before I could get the clutch in and the car filled with smoke as the oil burned on red hot exhaust headers. I killed the rear engine, closed the master fuel valve and began to decelerate. At first I was disgusted, disappointed and completely dejected at the turn of events but by the time the car came to a stop and my wife and the crew had reached me I had placed the car in the past; it was time to get on with my plans for the Land Speed Record Attempt car.

I KNOW THAT I CAN GET three times the horsepower in a car of similar size and at the time of this writing tires are being built that will carry my new car well over 400 miles per hour. Some components of the new car are now in the construction stage but many more are still on the drawing board. If all goes well, however, the new car, using four engines, will be on the salt flats this year.

Until then I shall always regard the experience of driving the old car across the Bonneville Salt Flats last August at close to 300 miles per hour as the greatest thrill of my 14 years of high-speed driving. I look forward, with great anticipation, to the day when I can drive even faster. /MT

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Standard—2 1/2-in. Dial, \$19.95

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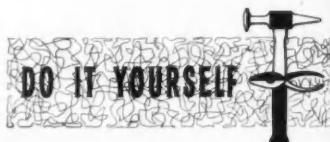
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Write: GRAHAM ELECTRONICS

Box 365 Dept. M, Alexandria, Va.



One way
to easier fiberglassing . . .

Apply it with pliofilm



Lay fiberglass cloth on larger sheet of pliofilm and prepare resin and hardener from kit.



Pour or brush combined resin and hardener on fiberglass patch and work out air bubbles.

FIBERGLASS IS OLD HAT but the new method of application developed by one fiberglass kit maker makes patching and repair less messy and considerably simpler in both time and tools. Here's how it works: cut the sheet of pliofilm three inches larger than the size of the fiberglass patch to be used. Lay glass patch on pliofilm. Combine resin and hardener in paper cup according to directions on kit, and pour over fiberglass patch. Use just enough to cover it fully, then smooth out air bubbles with scrap of cardboard. Pick up pliofilm and transport the resin-soaked fiberglass patch

to area to be repaired. (Make sure the surface is clean and dry by wire brushing or sanding.) Press patch against repair area, smooth out by working away from middle with fingers or cardboard scrap. The pliofilm keeps the resin off fingers.

When satisfied that the patch is properly seated and centered, leave the pliofilm in place and allow overnight drying in winter weather, several hours on warm days. Then pull off pliofilm as easily as peeling a banana and the patch is complete. No sticky fingers or tools to clean.

—V. Lee Oertle



Press patch firmly to working area. It may be smoothed without getting resin on fingers.



Leave pliofilm in place until patch is dry, then peel off. Fiberglass is now firmly set.

SPOTLIGHT ON DETROIT

continued from page 12

AN INNOVATION is the use of "living leather" upholstery and interiors. Through a new process of manufacturing, leather seats in the car will "breathe" air through perforations in a basket-weave pattern. Swivel seats are now standard. Two 126-inch-wheelbase body styles, in a choice of six solid colors, are offered: two-door hardtop and convertible.

EXPORT SALES over the past 20 years have averaged about five per cent of our annual output of passenger cars which, in a five-million car year, meant 250,000 sales. At present our exports account for well under two per cent of our annual output, while we are importing 10 per cent of our total domestic sales. Recent reports are that car ownership abroad, especially in western Europe, is now increasing faster than ours. If this is true, is it the present size and operating costs of American cars that are blotting them out of export markets? This conclusion may have some substantiation in the report by American Motors that Rambler exports in 1958 increased 10.3 per cent over 1957 while overall exports from U.S. dropped 16 per cent. Perhaps car makers should get their thinking back on a global basis and not be too swayed by some motivationalist who got his reaction from a poll at a women's club meeting in Bayonne, N.J.

ECONOMY CLAIMS by most manufacturers this year can stand looking into. Most of these claims are based upon the ability of the owner to operate his car efficiently on Regular fuel rather than Premium grades. Current price differential between the two grades runs as much as five cents per gallon. This is a good saving so long as the differential is maintained. If, however, oil companies that have spent lots of dough to install special tanks and pumps to dispense high test gas required in 1957 and '58 models, and only in some '59 jobs, find it expedient to close the gap on price differentials, much of the claimed economy can be snuffed out in a twinkling. And there is not much comfort in the claims by some oil companies that we can haul many more tons of steel the same number of miles with the same number of gallons than we were able to do 10 years ago. /MT



GOOD NEWS TRAVELS FAST

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Among sports car fans news about an outstanding piece of equipment gets around fast. That's why so many sports cars today are equipped with the Bendix® Electric Fuel Pump. It makes sense, because the Bendix Electric Fuel Pump was designed and built for people who demand perfection. If you are one of those enthusiasts who insist that a

car deliver every last ounce of power and performance that was engineered into it, then you want to know more about the Bendix Electric Fuel Pump. When you've tried it, you'll never operate a car without it—even if it does cost a little more. (Send for illustrated folder.)

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MOTOR TREND

TIME TO GO BUY-BUY

A MOTOR TREND CARTOON
FEATURE by CARL KOHLER

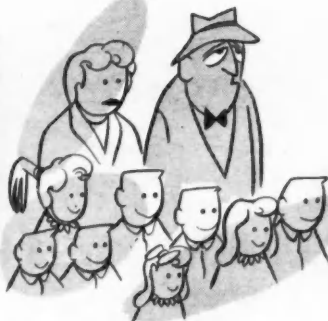
INTO EVERY automobile salesman's life a few offbeat customers must fall. While, for the most part, the average customer is intelligent, discerning and pleasant (like you and me)—the exceptions do show up with sufficient regularity to keep most salesmen on their toes.



ECCENTRIC . . . To the untrained eye this type seems to be a slovenly, transient bum merely loitering around the expensive models. Many inexperienced salesmen ignore him. The older hands treat him as though he were made of money—which he usually is. He generally writes a check for the full price on the spot.



FRAUD . . . Can be found in showrooms during the busier hours when there are not enough salesmen to go around—thereby allowing him to snoop about, eavesdropping on informative pitches and casing the layout. When cornered and pressed for his presence, he will admit to being a salesman from a competing showroom.



PLATOON LEADER . . . Converges upon the showroom in search of the right station wagon in which to haul his minor army. Is easily spotted by his haggard, dazed expression—if not by the accompanying horde of shrieking heirs. Practically sells himself because the salesman is too busy controlling the kids to give a sales pitch.



TEAM . . . The successful salesman assumes they know exactly which car she wants even though it takes her four hours to choose between the gray sedan with blue interior or blue sedan with gray interior. Proven technique: address all sales messages to man (building his ego), flash smiles at woman (pleasing her vanity).



CRITIC . . . Brings a very wary attitude into the showroom with him. Is factfully persistent about going over every conceivable detail of the model which interests him. Unknown to the sales force, he has been preparing for this careful pre-sale autopsy for months, appears eager to double-check the maker's specifications.



WISE GUY . . . All but shows up with his legal staff. Knows all the Fair Trade regulations, has memorized the current Blue Book contents, and knows every possible sales loophole since the horse went out of fashion. Likes to bully inexperienced salesmen by threatening to yell for the dealer and have them blacklisted for life.



ROAD TESTER . . . Has a sly habit of requesting to be allowed to drive the model he's considering buying. Tells salesman he simply cannot properly make up his mind until he has seen the car perform under all road conditions. If not restrained would take off and keep going until time for the first 1000-mile check.



GAYBLADE . . . Regards anything but sportscars with well-bred scorn. Treats salesman as fellow connoisseur and reacts with restrained, near-hysterical delight when praised for his knowledge of the comparative points of all small imports. Not a difficult type to sell if the salesman knows how to handle quasi-snobs.



Quick steering, and good visibility make TRIUMPH a dream to drive in traffic.

Why aircraft engineer calls British TRIUMPH "best engineered" of economy cars

Costs \$1000 less to buy, \$350 a year less to operate than an average car...yet no other car in its class performs so well

"Best engineered economy car" is high praise from anyone. But that's what an aircraft engineer writes about his new British TRIUMPH. He continues:

"Good things *do* come in small packages. The motor is simple and compact, yet it's got a surprising amount of 'go'. And my TRIUMPH takes rougher treatment than any other car I ever owned."

The TRIUMPH Sedan is made by Standard-Triumph of Coventry, England—the same people who make the TRIUMPH TR-3 sports car. Since the company's first cars appeared in 1903, they've gained a world-wide

reputation for fine engineering. And fine British engineering is very good indeed. Here's what the 1959 Sedan can do.

**Well over 70 m.p.h.—
40 miles to the gallon**

It goes faster than most cars of its kind. You can cruise all day at 65 with no strain on the engine. The car will do up to 60,000 miles without a major overhaul—often 100,000. The unitized body takes the roughest treatment and stays rattle-free.

Yet with all its performance, the TRIUMPH is a true economy car. Costs only \$1699, Port of Entry. And its ultra-quiet engine gives you up to 40 miles per gallon.

But is a TRIUMPH comfortable?

The TRIUMPH is 5 feet shorter than a typical American car (*much*

easier to drive and park). But there's *no* wasteful overhang. So inside, you get 1 inch more front seat leg room and 3 inches more head room.

Safety? You're surrounded by a body of solid Sheffield steel. With no big front end to peer over, visibility is excellent. And there are *two* brake shoes on each front wheel.

How to get a demonstration

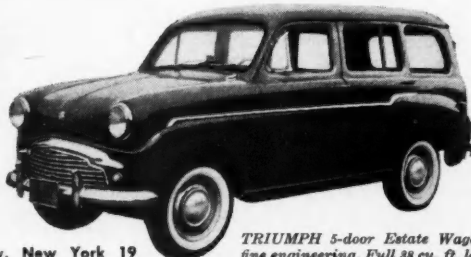
There are now TRIUMPH dealers in every state—over 700 in all. Just phone the one nearest you. He'll drive the car right to your door. Or drop in at his showroom if you prefer. But be sure to do one or the other soon. You see, we *can't* describe the best part of all—the pleasure a TRIUMPH brings back to driving. That you must experience for yourself.



TRIUMPH

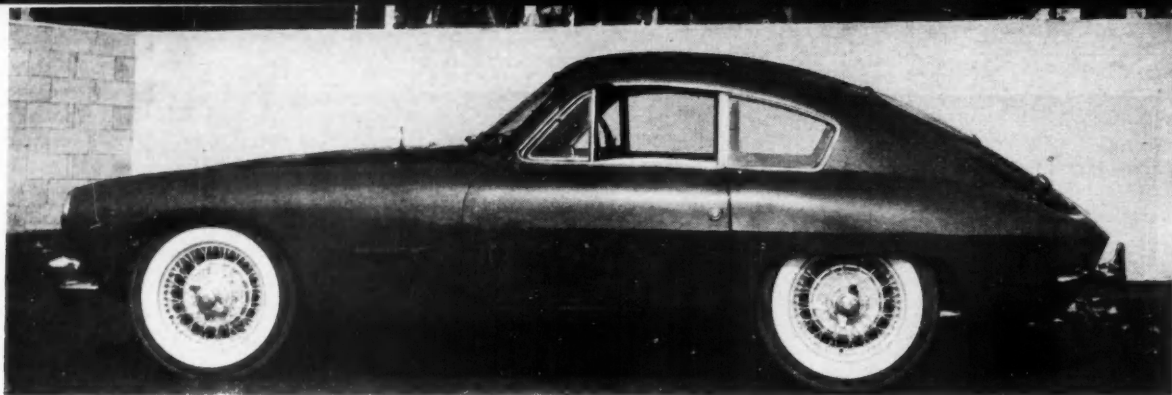
Sedan \$1699* Estate Wagon \$1899*

*At U.S. Ports of Entry. Slightly higher in the West. White walls extra.



TRIUMPH 5-door Estate Wagon. Same fine engineering. Full 88 cu. ft. load space.

Standard-Triumph Motor Company, Inc., Dept. DS-29, 1745 Broadway, New York 19

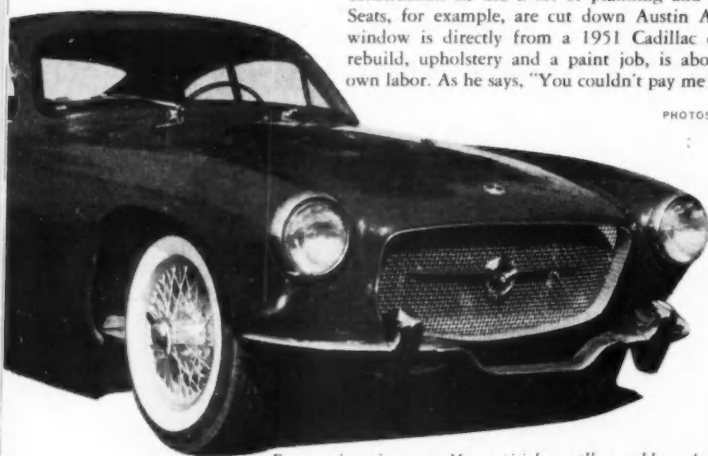


Styled in California, the fast-back profile of fiberglass Victress-bodied MG could be from Italian design studio.

BUILD-IT-YOURSELF GRAN TURISMO

A COUPLE OF YEARS AGO Dudley Dewey, Sherman Oaks, Calif. contractor, wanted a closed sports-car that was different, reliable and reasonably priced. After looking at Ferraris and Maseratis, none of which met all three of his requirements, he decided to build his own. He selected a 47½-inch-high Victress fiberglass coupe body, a rare and handsome item of which few have been built. Dewey knew that semi-finished fiberglass bodies allow the home builder unusual latitude. Errors can be covered, experiments with detail shaping may be carried on and the novice soon becomes an expert. The \$500 body investment was followed by another \$275 for a junkyard MG-TD, sans body. Then the fun started. An average of two hours a day for two years completed the job, although Dewey will probably never finish it complete. Currently, he is fabricating an air-conditioning unit which will give him the ultimate luxury in a Gran Turismo automobile. During construction he did a lot of planning and scrounging to come up with parts which would work. Seats, for example, are cut down Austin A-40; windshield is cut from a '55 Chevrolet and rear window is directly from a 1951 Cadillac coupe. His total cash investment, including an engine rebuild, upholstery and a paint job, is about \$2250. Dewey has never added any charge for his own labor. As he says, "You couldn't pay me to do a job like this."

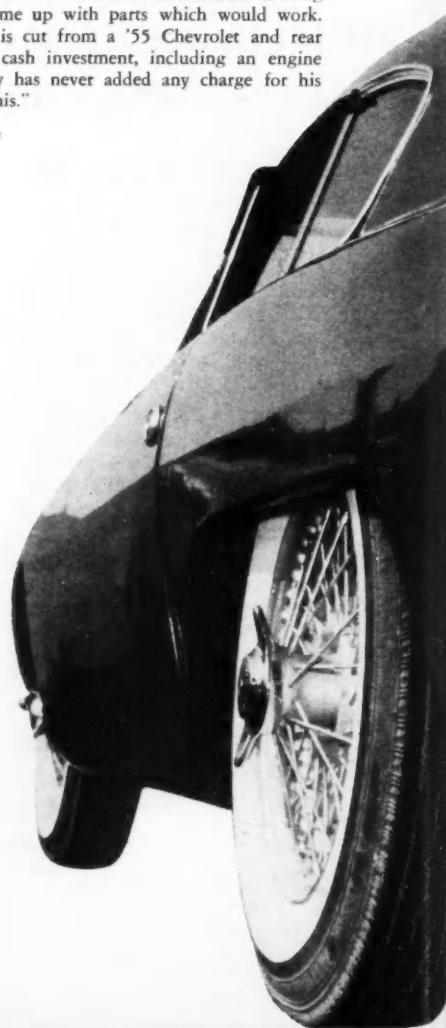
PHOTOS BY E. PAT BROLLIER



Front view is very Maserati-ish; grille emblem is Buick.



Only interior item which shows MG heritage is shift lever. Dash was adapted from Studebaker, seats from Austin A-40. Details show owner's pride in careful work.



SELL 'N' SWAP

Requirements are: copy limit of 25 words (not including name and address); 1st come, 1st served; we reserve the right to edit where necessary; we are not responsible for accuracy of description, although we will reject any misleading statements. This service is not open to commercial advertisers. No ads will be accepted if payment is not made in advance, and such communications will not be acknowledged. Only one CAR may be listed in any single Sell 'N' Swap insertion. This limitation will not apply to parts, catalogs, etc. The charge is \$4 per insertion. If your car is unusual and you have a photo of it suitable for publication, you may submit it with your ad. If we decide to print it there's no cost to you for the cut, but we'll have to decide which photos to use. Sorry, no photos can be returned—Editor

SELL

'59 LA SALLE V8 4-dr. sed. Burns oil & needs minor repairs—otherwise in good cond. Tires & battery good. Used daily. Best offer. William H. Pearce, R.D. #1, Box 244, Stonington, Conn.

'41 CADILLAC conv. Immac. restoration—genuine Cad wire wheels, completely new interior & top. An elegant sporty car with sharp performance & roadability. \$1295. Robert W. Hume, 3212 E. Virginia, Phoenix, Ariz. Phone CR 4-5093.

'37 FORD 812 phaeton. Body in good cond.; partially o'hauled. Must sell. Victor E. Feiler, Box 353, West New York, N. J.

'20 OLDSMOBILE extremely rare factory-built 1-ton truck. 95% restored; good running cond. Exc. for advertising or for any other purpose. Drive it away for \$850. Gay Atkins, Box 256, Twin Bridges, Mont.

'48 FORD conv. sed. Mech. good, drive anywhere; hydraulic brakes. No rust. Needs restoration. \$250. Wayne Wallick, 6823 W. 71st Terr., Overland Park, Kan.

'49 CROSLEY HOTSHOT rdstr. Good cond.; recently o'hauled, new tires. Best offer over \$400. All correspondence answered. Donald E. Brown, 705 S. Third, Sioux Falls, S. D.

'39 LINCOLN Zephyr 4-dr. sed. Orig., unusually clean, low mileage, exc. thruout. V-12 engine o'hauled. Goodyear Double Eagle w.w.s. Best offer around \$750. W. C. Lane, 14034 Archdale, Detroit 27, Mich. Phone VErmont 5-8447.

'47 LINCOLN CONTINENTAL hdt., with '50 Lincoln V8 engine, r & h. o.d. New paint, interior, premium w.w.s. Near-mint cond. \$1695. V. M. Waughop, 726 E. Maywood Ave., Peoria, Ill.

'40 PACKARD 180 custom 4-dr. touring sed., with side-mounts. Orig. black paint, 4 new tires, owner's manual. Positively like new; 49,000 mi. \$695. R. Tibbets, 36 Jones Ave., Randolph, Mass.

'31 STUDEBAKER sed. in exc. restorable cond. Mech. good, needs small amount of bodywork. Uph. good. Brakes need freeing, o.d. not working. \$300. R. H. Powell, P.O. Box 57, Paw Paw, Mich.

'20 MODEL T rdstr. Engine & chassis good; needs uph. repair. Licensed & driven. \$450. Orin A. Brinkmeier, Rt. 2, Freeport, Ill.

TUCKER—No. 19. Reconditioned engine & reconditioned Tucker transmission. Black paint, 2 gas tanks. Exc. cond., 10,000 mi. Can be driven anywhere. W. D. Bryan, Box 627, Dillon, Mont.

'48 LINCOLN CONTINENTAL conv. Dover white exterior, white Naugahyde interior, black top. '52 Olds 98 engine, o.d. Mint cond. thruout. See to appreciate. \$2200. Dave Boisjolie, 1335 12th Ave. So., Fargo, N. D.

'31 FRANKLIN. Engine, body, tires ok. Needs new roof, paint, glass. In storage 4 yrs. Best offer over \$500. Write for particulars. Oliver E. Perry, Covey Rd., R.F.D. #1, Unionville, Conn.

'41 LINCOLN CONTINENTAL conv. V-12 o'hauled 1200 mi. ago. New: maroon paint, chrome, tires, tubes, red & black Naugahyde uph., top, boot. \$875. Arthur H. Oller Jr., 846 Newton St., San Fernando, Calif. Phone EMpire 1-2305.

MG-A rdstr. White—with red leather, wire wheels, w.s. tonneau cover, heater. New Jan. '58. 8000 mi.; never raced. \$2200. Roy Hinds Jr., R.R. #5, Paris, Ill.

'38 LINCOLN ZEPHYR V-12 in good cond. \$700. Craig White, 2 Allerton Pl., Marblehead, Mass. Phone NEptune 8-4440.

'34 MERCEDES-BENZ 380-B 4-pass. rdstr.—1 of 12 built. 25,000 actual mi.; restored in Germany. Long.



low & beautiful. \$6000. Scott Moore, 9353 Muroc St., Bellflower, Calif. Phone TOpaz 6-7820.

'34 BUICK Series 57 4-dr. touring sed. Orig. equip't, in immac. showroom cond. 6 wire wheels, 6 new w.w.s. Mechanically A-1; standard shift. A collector's item. Asking \$625. D. J. Francis, 4508 Beck Ave., North Hollywood, Calif. Phone HOLlywood 2-3337. CLASSIC & ANTIQUE CAR Sales Catalogs: Packard, Chrysler, Lincoln, Cadillac, Pierce-Arrow, Buick, Orphan & Foreign cars; minimum \$5 each. Also MoToR (N.Y.) Annual Numbers. Details for large, stamped, addressed envelope. A. E. Twoby, 400 N. Kenmore, Los Angeles.

continued on page 81

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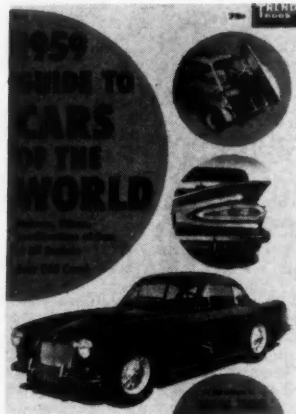
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WHAT'S YOUR QUESTION? CHECK WITH CHUCK

Conducted by **CHARLES NERPEL** Technical Editor

"Why don't all cars have built-in chassis lubrication?"

THE DAYS OF CHASSIS LUBRICATION, built-in or otherwise, are just about over. Synthetic fabric bearings, made of the "slipperiest" material known, have been used in aircraft for several years, and the very nature of the material itself makes lubrication unnecessary. American Metal Products of Detroit, working with polytetrafluoroethylene fibers developed by DuPont, have been able to produce bearings by molding processes that give perfect confirmation between the contacting surfaces with 10 times the load capacity of metal-to-metal lubricated bearings. Ordinary steering and suspension bearings lose much of their lubricant through pressure within a few hundred miles of driving, and what is left often mixes with the ever-present grit and dust of the road, forming a pretty good abrasive. Dry bearings require no sealing, do not pick up abrasive dirt, exclude mud and dust by their accurate fit, and maintain that original new quality because heavy use does not destroy the lubricating quality of the slippery-fabric material.

"Can better driving habits reduce winter hazards?"

FOUL WEATHER DRIVING TECHNIQUES are just as important to the safety of you and your car as the winter preparation of your vehicle. Many persons do not find out, until that first rainy day, that their brakes need adjustment. A little more "driving ahead," or anticipating what might take place in traffic in front of you, will save a lot of trouble on snow- or ice-covered roads. Being caught without chains often causes trouble that could be avoided with a little more care. We have seen drivers stop at the top of a snowy grade to admire the scenery while cars behind were forced to a halt on slick surfaces from which they could not get started again without the hassle of digging, or using burlap sacks or anything else they could put under the wheels to get traction. Stopping distances, even at crawling speed, are increased a great deal by icy surfaces, so allow more room from the car ahead. Spinning the wheels on soft snow quickly changes it to ice, reducing the chances of good traction. Pulling away, if you do have to stop, is best accomplished in second gear or the intermediate range of the automatic transmissions. Use your head instead of your horsepower, and winter driving can become a pleasant challenge rather than a dangerous mission.

"What will the proposed aluminum engine do for my car?"

BESIDES A LONG LIST of mechanical advantages for the use of this type of metal for internal combustion engines, the first thing the average motorist will notice is that his car will steer easier. Considerable weight reduction will take quite a bit of the load off those front wheels and might give a few more inches of legroom by allowing the lighter engine to be moved farther forward, and at the same time provide better front-to-rear weight distribution than now exists. Dissipation of heat will be greater than with cast iron engines and the possibility of aluminum-core radiators will further reduce weight and space. Plating cylinder walls with hard metals rather than lining with sleeves will pose problems that might put reborers in the plating business, and when the manufacturers solve this and a few other production barriers, we will have aluminum engines.

"What is a fifth wheel?"

A FIFTH WHEEL IS A DEVICE used to measure speed or distance traveled, independent of the driving wheels or built-in measuring devices such as speedometer and odometer. It is a bicycle wheel on a heavy hub that drives a linear generator and a counter. The linear generator puts out voltage in direct proportion to its driven speed, and a voltmeter, calibrated in miles per hour, gives a very accurate actual speed reading. The counter is just a contact that counts wheel revolutions, which converted to distance traveled per turn, provides measurements down to 6.82 feet, the distance per turn the wheel travels. One big drawback for those who would like to build one is the high cost of the generator and meter—about \$330.

SELL 'N' SWAP

continued from page 79

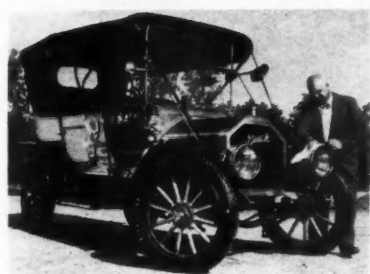
MODERN STEAM CARS—Magazine describes super-efficient 1958 American steam automobile also classic Dobbles. Only \$3 for a year's supply. Dollar bills accepted, no coins. **Light Steam Power**, Kirk Michael, Isle of Man, U. K.

STEAM CAR POWER UNIT—complete engineer's plans of steam unit for light car—switch-on start. \$4.25. Castings, machined components. Dollar bills accepted, no coins. **Light Steam Power**, Kirk Michael, Isle of Man, U. K.

SIDEMOUNT TIRE MIRRORS. Brand-new, fully adjustable to fit all sizes of tires & wheels. Chrome-plated over brass & nickel. Complete with necessary locks & keys. \$35 pr., postpaid & insured. A. Ward Shanan, 2444 S. Orkney St., Philadelphia 48, Pa.

41 CADILLAC 62 4-dr. sed. R & h. w/w's. Mechanically perf.; 60,000 orig. mi. Rides & drives like a new Cadillac. \$495. A. Ward Shanan, 2444 S. Orkney St., Philadelphia 48, Pa.

'09 BUICK Model 17 Big Four. Completely restored; lots of brass. \$7 Glidden Tour. \$3000 firm. Pix \$1.



refundable. J. D. Powell, 3142 W. Cary St., Richmond, Va. Phone EL 5-5322 or AT 8-1225 (eves). 1000 BOOKS on Classic & Antique Cars, Automobile Engineering, Motor Racing, Owners Handbooks & Factory Shop Manuals, Catalog 25c. Vivian Gray, The Motorist's Bookseller, Hurstpierpoint, Sussex, England.

TRIPPE SENIOR safety driving lights. World's most powerful—8 1/2 in. diameter. Complete with all brackets, fittings, wiring & Gulmire wrenches. Brand-new, in orig. boxes. \$35 pr., f.o.b. Philadelphia. A. Ward Shanan, 2444 S. Orkney St., Philadelphia 48, Pa.

REDI-WARM automatic engine starters. Enjoy summer starting all winter long. Complete kits with all fittings & instructions. Brand-new, in orig. cartons. \$25, postpaid & insured. A. Ward Shanan, 2444 S. Orkney St., Philadelphia 48, Pa.

ANTIQUE & CLASSIC CAR manuals, pix, books, parts, old car ads, info, history, restorations, etc. Send 25c for list. Stanley Edelstein, Pres., Antique & Classic Car Club, 3619 Bedford Ave., Brooklyn 10, N. Y.

THE ANTIQUE & CLASSIC CAR Club is again open to new members, due to numerous requests. For info about club or how to join, send stamped, self-addressed envelope to: Stanley Edelstein, Pres., 3619 Bedford Ave., Brooklyn 10, N. Y.

MOTOR SHOW NUMBERS & monthlies, 1925 thru '40. Orig. magazine ads & color prints on all the great classics. Hundreds of catalogs & brochures on every auto 1925-42. New listing on Motor Antiques, monthlies & magazine ads 35c. Sheldon J. Lewis, 61-33 215th St., Bayside, L. I., N. Y.

'31 STEYR 4-dr. sed. (Austrian make). Good engine & body. For collection or museum—possibly



only one of its kind in U.S. Best offer. Frank Miller, P.O. Box 1069, Milwaukee, Wis.

'24 MODEL T cpe. Exc. cond., everything orig.—drive anywhere. \$1000. Robert Stempin, R.R. #2, Quincy, Mich. Phone ME 9-7240.

'13 MODEL T touring. Completely restored—new tires, paint, top, uph. Perf. mechanical cond. James J. Brown, Lawrenceburg, Ky. Phone TE 9-4995.

'33 PACKARD V-12 4-dr. sed. Good mechanical cond.; body good, uph. fair. James J. Brown, Lawrenceburg, Ky. Phone TE 9-4995.

'35 FORD 4-dr. phaeton. Completely restored—59-A engine, hydraulic brakes, new tires, paint, top, uph. A-1 mechanically. James J. Brown, Lawrenceburg, Ky. Phone TE 9-4995.

'41 LINCOLN CONTINENTAL hdp. V-12 engine in perf. cond. New uph., paint, tires—handles like a dream. James J. Brown, Lawrenceburg, Ky. Phone TE 9-4995.

'41 LINCOLN CONTINENTAL conv., with '53 Chrysler V8 engine. Good body, tires, top & uph.

Sell to highest bidder 30 days from this publication. R. J. Boggs, Box 31, Leo, Ind.

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'42 LINCOLN CONTINENTAL conv. Customized body. Carson padded top. New Caddy engine with less than 7000 mi. Best offer over \$1800. Will



send pix & answer all inquiries. D. A. Brittain, 4556 Appian Way, El Sobrante, Calif.

'30 PLYMOUTH 4-dr. sed. New paint, 4 new tires; in very good running. \$275 or best offer. Ivan Reetz, Rt. #1, Neshkoro, Wis.

'28 MODEL A 2-dr. sed. 5 coats of black lacquer, new top & uph. Engine in exc. shape; exc. running cond. \$375. Jack Bryan, R.R. #2, Lineville, Iowa. Phone TRIangle 6-5471.

'37 BUICK Roadmaster conv. 4-dr. phaeton. Completely orig. thruout; r & h. Mechanically perf.; needs very little body restoration. Best offer over \$350. David Di Giuseppe, 1503 S. Juniper St., Philadelphia, Pa. Phone HO 8-2542.

'29 HUMPHREY 4-dr. sed. Body & paint in exc. cond. Engine just o'hailed; good running cond. Richard H. Black, 1201 Fairmont Ave., Fairmont, W. Va. Phone 3-2427.

HUNDREDS OF AUTO ADS on classics & antiques from 1917 to '37—many in color. Send 15c for listing. Roger Hampshire, 909 Pratt, Barry, Ill.

'30 MERCEDES-BENZ conv. cpe., with Lycoming V-12 engine, sidemounts, rumbleseat. A massive, powerful car in exc. cond. Best offer. D. W. Hoenke, 115 Washington, Chesterton, Ind. Phone CHEster-ton 6-5333.

V-16 CADILLAC ENGINE, radiator & transmission—'30 model. Engine No. 701540. Exc. running cond. C. H. Gruenstern, 3947 S. Penn. Ave., Milwaukee 7, Wis.

'53 CADILLAC 4-dr. hdp. custom by GM. Cost \$65,000 to engineer & build. Air-conditioned, leather interior, power windows & seats. One-of-a-kind. \$3800. Cliff Tomes, 327 Robinson, Danville, Ill.

'38 LA SALLE opera cpe. Orig. moleskin gray paint, r & h, w/w's with puncture-proof tubes, new battery. Mechanically perf. \$350 firm. Pix upon request. Charles J. Borrin, 55 Osgood Ave., Staten Island 4, N. Y.

EDMUNDS DUAL MANIFOLD, Shanefelt alum. heads, .090 oversize pistons for V8-60. Also rods, block, crank, camshaft, valves, pan for same. Best offer—all or part. William E. Thayer, Rt. 2, Box 115, Silverton, Ore.

'47 LINCOLN CONTINENTAL V-12 cpe. Black, with nearly new nylon w/w's. 38,000 orig. mi.; in exc. cond. thruout. \$1500. Herb Page, 2007 S. Arlington Heights Rd., Arlington Heights, Ill.

'48 LINCOLN CONTINENTAL conv. New blue exterior, w/w's; orig. blue leather interior, carpets. Orig. engine; exc. cond. \$1600. W. P. White, Jr., 950 Hill Rd., Winnetka, Ill.

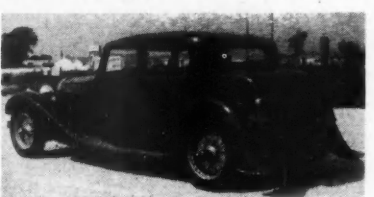
FUEL INJECTION for 348-cu.-in. Chevy engine. Made by Stone Engineering. Going in Army—best offer over \$125 takes it. Ronald Yant, 5032 E. Blvd., Canton 8, Ohio.

'37 PACKARD 4-dr. in exc. running cond. Good body finish (black), rust-free. 7x16 w/w's. \$200 or best offer. Bill Shaw, 1104 Euclid Ave., Champaign, Ill.

'26 MODEL T rdstr. Good cond. thruout; good 3.50x30 tires; no top. Send 25c for pix & info. 1st \$450 takes it. Dean Donelson, Box 165, Central City, Neb.

'41 PACKARD CLIPPER black sed. Beautiful narrow cast grille. Minimum restoration needed. Body resembles current Rolls-Royce Silver Cloud saloon. 1st \$295 takes. Pix 25c. W. Flanigan, 1024 Oakland Ave., Mt. Vernon, Ill. Phone 821-W.

BUGATTI Type 57 4-dr. pillarless saloon. Good cond.; all orig. equip't. Could use paint, interior



work. Giving up cars: sacrifice for my orig. cost. R. F. Salem, 4669 W. 82nd Pl., Chicago 29, Ill.

PIRSCH 'Junior' free truck—beautiful shape, completely equipped. Genuine rig—nor a conversion. Small enough for your garage. Bruce S. Lane, Rt. 1, Box 459, Galesburg, Mich.

'34 FORD V8 5-window cpe. 6 wheels; orig. & perf. Can be driven anywhere. Highest bid over

\$500 . . . worth \$1000. Pix on request. Dale Watson, Plainview, Neb.

'54 KAISER-DARRIN rdstr. Beautiful flame red, with new white top & side curtains, new rugs. O'hailed engine. \$1600 firm. E. D. Bitler, 951 Southard St., Trenton, N. J.

'36 FORD 5-window street cpe. with stock body. Show winner—literally has everything. Exc. cond.; nearly \$2000 invested. Best offer takes. Write for pix, details. Richard Carey, Calkins Rd., Youngstown, N. Y. Phone SHadyside 5-7781.

'13 MODEL T sed.—85% restored. Mechanically perf.; orig. engine. New top. Asking \$1250. R. A. Flint, 99 Border St., Cohasset, Mass.

MODEL T WHEELS—good, used wheels, demountables & non-demountables. Chevrolet Motorometer with cap. \$7.50. Peerless homecom radiator for '09-'16 Ford, \$20. '15 Maxwell rdstr. windshield, \$15. Norman R. Miller, 1422 N. Lincoln Ave., Davenport, Iowa.

'55 MERCEDES-BENZ 300-SL—1st sold in '56. Alum. body, rudge wheels, ivory paint, red leather uph. 20,000 mi. \$4000 f.o.b. Milano. Pix on request. V. A. Corradini, 131 Via Gallarate, Milano, Italy.

BUGATTI Type 43 2.3-liter supercharged rdstr. New tires, engine & body in perf. cond. Previous owner Bugatti specialist. \$1750 f.o.b. Zurich. V. A. Corradini, 131 Via Gallarate, Milano, Italy.

'48 LINCOLN CONTINENTAL hdp. Orig. 12-cyl. engine, power windows, o.d., w/w's. Body, chrome, uph. exc. Actual mileage 63,000. \$1295. Cecil Tate, Box 415, Liberty, Tex.

'22 BUICK Light Four 4-dr. sed. Repaired & restored to perfection. Must see to appreciate. Sacrifice for \$650 or best offer. L. H. McClure, 524 N. Rockingham Ave., Los Angeles 49. Ph. GR 2-4553.

SELL OR SWAP

'29 BUICK cpe. in exc. cond. New tires, paint, chrome. Engine superb. Desire any sport. Prefer Allard—cond. unimportant. Make offer. Will pick up & deliver. John Petronchak, 6 Alcott St., Ansonia, Conn.

'32 ALBUERN V-12 phaeton—everything new. Will



trade even for any Auburn Speedster. Charles Zemko, 231 Hamburg St., Buffalo 4, N. Y.

'49 ALLARD—Chrysler 300, John's pistons, roller cam, ported & polished, racing Cunningham manifold, Mallory ignition, completely balanced. Caddy box, disc brakes, racing tires. 500 mi. on engine. \$750 or trade '50 Jaguar. Phil King, 1611 N.W. 7th Ct., Miami 36, Fla.

'39 CADILLAC V8 cpe. Engine rebuilt, new paint, special exhaust—otherwise orig. Exc. cond. \$500 or swap for clean '53-'55 Studebaker V8 stickshift cpe.

WANTED

'28-'32 LINCOLN (prefer '32) dual-cowl phaeton in good to exc. shape. Will pay good price for good car. \$25 reward for successful lead. W. B. Adams, 521 Cumberland Ave., Syracuse, N. Y.

FOR '41 GRAHAM HOLLYWOOD: front & rear left doors, trunk lettering, windshield frames, & literature on car. G. Mongan, 100 Plummer Ct., Neenah, Wis.

PARTS CARS—'19 to '38. No wrecks—no fantastic prices. Also, radiator emblems, motorometers, auto lapel pins, hubcaps, manuals (owner's & shop), etc. Stanley Edelstein, Pres., Antique & Classic Car Club, 3619 Bedford Ave., Brooklyn 10, N. Y.

'49 CHRYSLER Windsor or Royal clb. cpe. in immac. orig. cond. Will consider any area of U.S. Send description & price—pix if convenient. J. E. Legory, 225 W. Prospect Ave., State College, Pa.

V-12 ENGINE or block assembly or crankshaft-piston rod assembly for '48 Lincoln V-12. Must be new or real good. Harry Booher, R.R. #2, Urbana, Ohio.

STANLEY STEAMER in restorable condition, preferably—or restored. Horace Nelson, 7215 156th S.W., Edmonds, Wash. Phone PROspect 8-2843.

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ENTHUSIASTS—interested in forming National Kaiser-Frazer owners club. Now partly organized, but need more active members. Write for details. Thomas S. Rankine, 32121 Thorncrest Dr., St. Clair Shores, Mich.

PARTS FOR JAGUAR MARK V: 1 radiator shell & grille assembly, 1 hood—right side, 1 hood panel—right side, 1 right front fender. Charles E. Galley, 8675 Indians Ave., Lemoyne, Pa.

FOR EXPORT—1 heater, defroster & underseat unit for '57 Lincoln. Must be guaranteed A-1 cond. Write P. A. Rogers, The Hawthorne Commercial Co., 200 Central Ave., Hawthorne, N. J.

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ESCAPE ROAD

Edited by
Erwin Rosen



TEXAS STORY NO. 86327

A Texan took his nine-year-old son into a Houston Cadillac agency.

"I reckon I'd like to buy a Cad for my kid," he told the salesman.

"Sorry, but we don't have a Cadillac small enough for your son," was the reply.

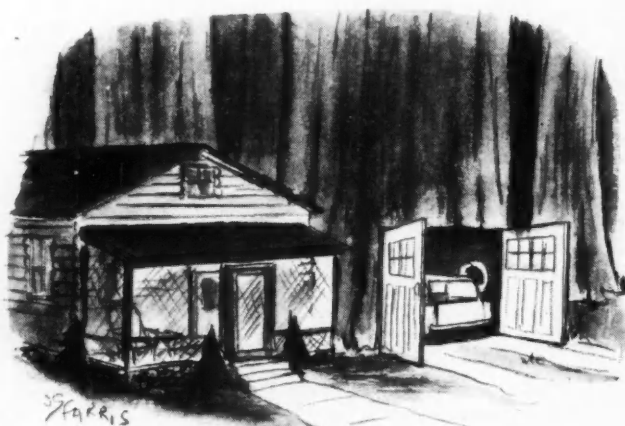
"Oh, I don't want to be cheap about it . . . just let him have that Eldorado Brougham over there."

"But that car costs almost \$14,000," said the astonished salesman. "And besides—your son is too small to get a driver's license to drive on the highway."

"Oh, we don't intend to let him out of the house with it," the Texan drawled, "just drive it from room to room."



"Did that fellow from the auto loan company find you yesterday, Dobson?"



"We British simply insist on quality!"



You'll love the *Vauxhall* for the same reasons the British do!



Only the British could craft so trim a station wagon . . . give it so much room . . . and such easy parkability. The Vauxhall Estate Car brings to America a new kind of motoring practicality with full 5-passenger roominess, 4-door convenience, flat-folding rear seat and 45 cubic feet of cargo space. Its compact British-engineered power plant cruises you easily at highway speeds—with fuel economy remarkable even by austere English standards. Above all, it carries the proud stamp of meticulous British craftsmanship, admired around the world. Priced below any American 4-door wagon, the Vauxhall Estate Car makes it easy to widen your horizons with a wagon.

For colour catalogue, write Pontiac Motor Division, Dept. 41, Pontiac, Mich.

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OF A **WINSTON**

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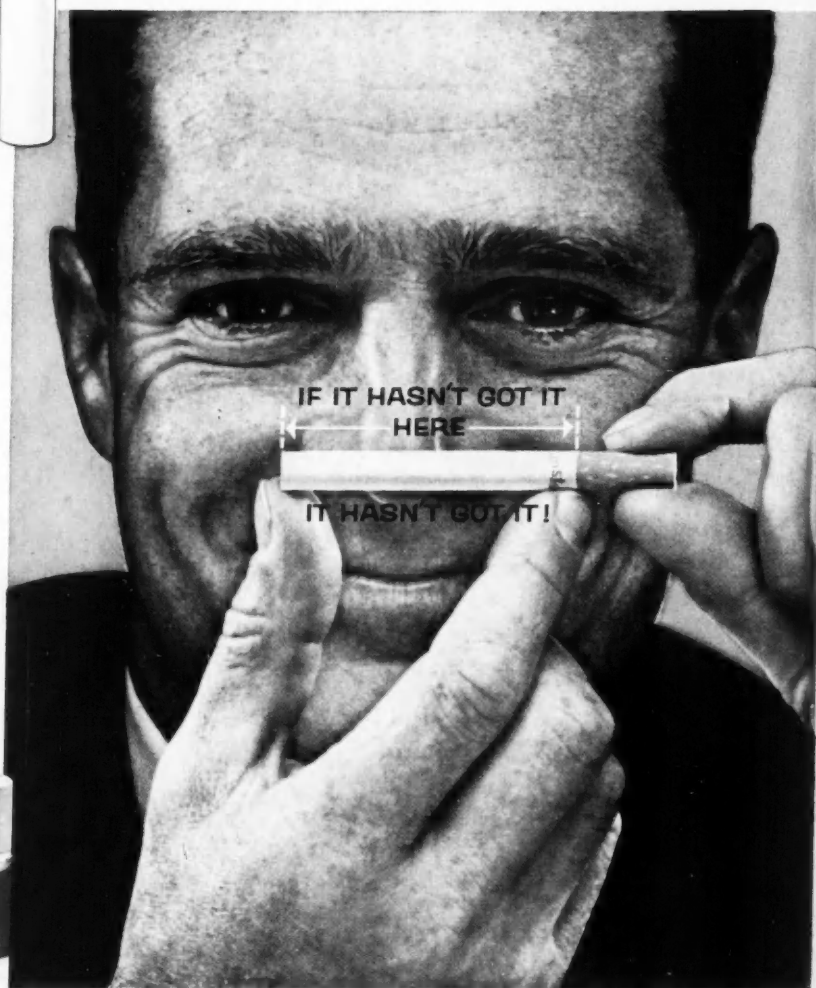
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FILTER-BLEND means fine tobaccos specially processed for filter smoking. **FILTER-BLEND** is the real difference between Winston and all other filter cigarettes.



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